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PLANNING AND PLAN IMPLEMENTATION

ELEVENTH FIVE-YEAR PLAN: ITS FEATURES, TASKS

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 1, Jan 82 pp 3-15

[Article by N. Baybakov, deputy chairman of USSR Council of Ministers, chairman of Gosplan USSR]

[Text] The party's economic policy designates broad perspectives for the progressive economic growth of developed socialism. In conformity with this, a state plan was developed for the 11th FYP meeting the requirements of the Basic Directions of USSR Economic and Social Development for 1981-1985 and for the Period to 1990. It was approved by the November (1981) Plenum of the CPSU Central Committee and approved by the sixth session of the tenth convocation of the USSR Supreme Soviet. Simultaneously a plan of USSR economic and social development for 1982 was approved. The plans designate tasks that make it possible to solve the chief target of the five-year plan. They incorporate the party's course of growth of the country's economic potential, raising the effectiveness of the national economy and fulfillment of the decisions of the 26th CPSU Congress in the field of social policy.

L.I. Brezhnev's speech at the November (1981) Plenum of the CPSU Central Committee contains a comprehensive analysis of the key problems of the country's economic and social development and provides a detailed assessment of the developed five-year plan; attention is drawn to the difficulties and defects in planning, operation and management and ways are indicated for their elimination. Confidence was expressed that the decisions adopted by the Plenum of the CPSU Central Committee will serve as a powerful impulse for the continued progress of the constructive work of the Soviet people in fulfilling the 11th Five-Year Plan, the chief task of which, as determined by the 26th CPSU Congress, is ensuring the further growth of the well-being of the Soviet people on the basis of a stable, progressive development of the national economy, acceleration of scientific-technical progress and transfer of the economy to an intensive path of development, more efficient use of the country's production potential and all-out economy of all forms of resources and improvement of quality of work.

For its solution, the plan stipulates a stable rate of economic growth, acceleration of the process of intensification of public production and progressive changes in the structure of the national economy. Stress is laid on more efficient use of production resources and advancing growth of final national-economic results compared to outlays on their achievement. These are aided by the targets outlined in the five-year plan for accelerated growth of labor productivity, the development

and wide-scale introduction of progressive equipment and technology, bolstering of the basic sectors of industry as well as measures for improving proportion and balance in the development of the unified national-economic complex of the USSR, improvement of the system of management and planning and the use of advanced forms of organization of labor and production.

In the preparation of the five-year plan, it was necessary to take into consideration not only the positive tendencies and factors of economic growth but also those which exert a restraining influence on the development of the national economy. This applies first of all to the significant reduction in the growth of labor resources, increases of expenditures in connection with the development of new regions, the necessity of significant outlays for maintenance of the attainment of the level of production and reequipment of many old enterprises and development of the infrastructure and protection of the environment.

In developing the plan, it was necessary to take into account the fact that in the last five-year plan targets for the start-up of production capacities and for boosting labor productivity and volume of output of a number of important products in certain sector of industry were not fulfilled. Our agriculture developed under difficult circumstances connected with unfavorable weather conditions; this had a negative effect on the results of operation of the entire agroindustrial complex. Inconsistency in fulfilling targets in individual sectors of the economy gave rise to certain disproportions that must be eliminated in the present five-year plan.

Materials on the 11th Five-Year Plan are widely presented in the press. In this connection, I shall only dwell on the most important problems of economic development.

Efficiency of Domestic Production

The 11th Five-Year Plan is a new important stage in the building of a material and technical base for communism, improvement of social production relations and establishment of the new man.

The special features of the current five-year plan are the growing role of efficiency of production and quality of work in the establishment of stable rates of growth and improvement of the structure of the economy and an advancing growth of final results over outlays for their achievement. Together with this, the increased social orientation of the five-year plan find its expression in the designated significant changes of the most important national-economic proportions in favor of the production of consumer goods. The share of the consumption fund in the total volume of the national income reaches 78 percent versus 75.3 percent in 1980. The five-year plan likewise provides for more rapid tempi of production growth of B group sectors compared to the sectors of group A. The contribution of sectors of heavy industry in the production of consumer goods is being increased: the production of goods of cultural, consumer and household use will grow at a faster tempo. With growth of the A group of industry by 25.5 percent, production of goods of cultural, consumer and household use will increase 1.4-fold. Availability to the population of many goods presently in short supply will be improved. The real income of the population will rise 16.5 percent and the volume of retail goods turnover--23 percent. The planned change of the main national-economic proportions in favor of production of consumer goods clearly reflects the untiring concern of Lenin's party for the well-being of the Soviet people.

The special features of the 11th Five-Year Plan also include planned acceleration of the growth rates of industry and agriculture, providing more than two-thirds of the total social product and higher absolute growths for the most important indicators. Thus growth of the national income for 1981-1985 will amount to 78.5 billion rubles versus 74.5 billion during the 10th Five-Year Plan and of manufactured products--160 billion rubles versus 122 billion and also of agriculture (in average yearly computation)--16.4 billion rubles versus 10.2 billion. Growth of retail goods turnover, profit and other indicators will also increase.

An increase in absolute growth of production is attained through a significant curtailment of growth in the number of employees in the production sphere, which attests to the increased effect of intensive factors on the development of the national economy.

It should be especially emphasized that acceleration of growth rate and an increase in the absolute growth of production under conditions of a change of proportions in favor of consumption constitute a new and difficult task. Its realization demands other approaches to organization of production and construction and efficient utilization of resources in all elements of the operational system.

The main thing here, as was pointed out at the 26th CPSU Congress, is an all-round transition to intensive methods of operation expressed in quicker growth of the final results of public production compared with the growth of national-economic resources. The 11th Five-Year Plan was compiled in this way. It provides that such final results as the national income, production of consumer goods will grow more rapidly than capital investments and labor and material resources (5-year growth rate in percent) [see Table 1].

It is important to emphasize that in the 11th Five-Year Plan the significance of a 1 percent growth versus the Tenth significantly increases. Thus while during the Tenth Five-Year Plan a 1 percent growth of national income amounted to 3.6 billion rubles, in the 11th the figure is 4.4 billion rubles; for the consumption fund--2.7 and 3.3 billion rubles, respectively; for production of group B sectors in industry --1.4 and 1.7 billion rubles.

Targets designated in the plan for accelerated growth of the key indicator of effectiveness--labor productivity. The following targets of growth of labor productivity are set for sectors of the national economy: in industry--23 percent, in agriculture (in average yearly computation)--also 23 percent, in construction--15 percent and in railroad transport--10.5 percent. This makes it possible to obtain roughly 90 percent of the growth of the national income and industrial production, the entire growth of the production of agriculture and of construction and installation work and 86 percent of the increase of the volume of hauls on railroad transport. The increased labor productivity ensures a conditional labor economy of approximately 17 million workers.

The accomplishment of these tasks requires of ministries, departments, union republics, associations and enterprises the implementation of a large complex of measures for boosting the technical equipment of labor, accelerating mechanization and automation of production processes, strengthening of discipline, curtailing the number of workers engaged in manual labor and improving organization of production.

Table 1

	1976-1980	1981-1985
Indicators characterizing final national-economic results:		
national income used for consumption and accumulation	20.6	18.0
group B production of industry	20.8	26.2
agricultural production (computed according to average annual production)	9.0	13.2
Indicators characterizing outlays on development of national economy:		
capital investment--total	29.0	10.4
including in the production sphere	32.0	13.0
number of workers, employees and kolkhoz farmers employed in national economy	7.3	3.0
production of fuel-power resources	20.7	16.9
freight turnover for all forms of transport	24.2	19.4

Table 2

	1976-1980	1981-1985
Economy:		
rolled ferrous metals, millions of tons--total	6.8	10.6
including:		
machine building	5.6	8.5
construction	1.2	2.1
fuel-power resources, millions of tons of conventional fuel	125.0	205.0
cement in construction, millions of tons	5.0	7.4
Reduction of production cost through use of secondary resources (other than scrap and wastes of ferrous and nonferrous metals	5.0	7.0

Serious attention is paid to the reequipment of all sectors of the national economy with high-efficiency equipment and growth of the capital-labor ratio. In industry it will grow 34 percent over the five-year period, in agriculture--45 percent and at transport and communications enterprises--25 percent.

During the 11th Five-Year Plan, the national economy should emerge on a qualitatively new level of utilization of resources that the country has at its disposal. This will be abetted by the recently adopted decree of the CPSU Central Committee and the USSR Council of Ministers "On Increasing Work on Economy and Rational Utilization of Raw-Material, Fuel-Power and Other Material Resources." The decree points out the pressing need of consistent application in practice of the principle of socialist management, the fulfillment of Lenin's instructions--to accurately and conscientiously keep count of money and to adhere to a very strict regime of economy. In short, "the economy must be economical."

The plan establishes targets for reducing the expenditure of the main forms of raw-material, fuel-power and other material resources that are higher than in the 10th Five-Year Plan. Provision is also made for fuller use of secondary material

resources. As a result there will be economized a large quantity of lumber, synthetic rubber, woolen, cotton and synthetic fibers and many other forms of raw and other materials [Table 2].

The growth of profit is accelerated on this basis. The five-year plan provides for a 40-percent increase of profit in the national economy versus 24 percent during the 10th Five-Year Plan.

The tasks set in the 11th Five-Year Plan require of party, soviet and trade-union organs and all personnel of the operational front a high level of organization, enterprise, responsibility and the ability to approach the solution of production and scientific-technical problems in a state and creative way.

An organic constituent part of the 11th Five-Year Plan are special-purpose complex programs for the solution of major social-economic and scientific-technical problems and also the creation of regional production complexes. The program breakdown of the plan, closely coordinated with the tasks of the national economy and individual regions, will contribute to improving the comprehensiveness of their development and the balance of state plans. Special attention is given to the development of food and fuel-power special-purpose programs and also to long-range progams of mechanization and automation of loading-unloading, materials-handling and warehousing work, development of transport, machine building, economic development of the Baykal-Amur Main Line

A significant factor in raising the efficiency of public production is systematic improvement of the economic mechanism. The 11th Five-Year Plan was worked out with account being taken of the requirements contained in the decree adopted 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Raising Efficiency of Production and Quality of Work." Unfortunately, during the past period many provisions of this document were implemented slowly. It is necessary for Gosplan USSR, USSR ministries and departments, councils of ministers of union republics and heads of associations and enterprises to take all steps for the quickest and complete realization of the need for improving the economic mechanism proposed in decisions of the party and government and for transition to the new conditions of work. In this connection, the main attention should be directed to unconditional fulfillment of the set targets, strict observance of contractual discipline as to time and deliveries of the product mix and the prohibition of corrections of plans in the direction of their reduction.

Development of Science and Acceleration of Technical Progress

The five-year plan provides for further acceleration of scientific-technical progress--a decisive factor in shifting of the economy to the path of intensive development. There is planned an increase in the production of new machines and equipment, transport equipment, instruments as well as more economical materials.

During 1981-1985, there will be introduced into production about 19,000 designations of new kinds of machines, equipment, instruments and materials versus 17,500 designations in the 10th Five-Year Plan. This will make it possible to improve the parameters of production output, to increase productivity of equipment and to

introduce essentially new manufacturing processes. Thus raising the technical level of newly introduced metal-cutting lathes and machine-tool automatic lines ensures the growth of the productivity of this equipment 1.5-1.6-fold. For the five-year period, the productivity of machine-tractor units due to raising of their technical level will grow 1.2-1.3-fold and the operational life of engines to the time of capital repair--from 5,000-6,000 hours to 8,000-10,000 hours.

The rate of automation of production will be accelerated. There will go into operation more than 2,700 automated control systems for manufacturing processes and 7,300 computer complexes based on microprocessors and minicomputers. The operation of capacities of computers for general use will be doubled.

Special attention was paid to mechanization of processes with heavy and harmful labor conditions. The creation and start-up of production of new kinds of materials-handling, loading-unloading and warehousing equipment, automatic manipulators, which will be used in all sectors of the national economy are scheduled. During 1981-1985, it is planned to produce more than 30,000 automatic manipulators, which is eightfold more than during 1976-1980.

In power engineering, chemistry, metallurgy, the coal industry and construction materials industry, there is planned wide-scale introduction of technology involving the use of machines of large unit capacity. In particular there is planned in power engineering the opertional start-up of atomic reactors with a unit capacity of up to 1.5 million kilowatts. The scale of employment of automated power units of 500 and 800 megawatts, operating on the coal of Kansk-Achinsk and Ekibastuz basins will be expanded.

For the purpose of reducing the expenditure of organic raw materials, new types of plastics will be introduced that possess high heat resistance, mechanical durability and are not disintegrated under conditions of a high vacuum and aggressive media.

An important direction of scientific-technical progress is raising of the quality of production output. During the years of the current five-year plan there will be a significant growth of the relative share of products of the highest category of quality. By the end of the five-year plan, it should reach 20.5 percent versus 15.4 percent in 1980, including for the Ministry of Electrical Equipment Industry, the Ministry of Machine Tool and Tool Building Industry, the Ministry of Instrument Making, Automation Equipment and Control Systems, the Ministry of Automotive Industry, the Ministry of Tractor and Agricultural Machine Building, the Ministry of Machine Building for Animal Husbandry and Fodder Production and the Ministry of Construction, Road and Municipal Machine Building--40-50 percent.

The five-year plan provides for the expansion of the scale of introduction of labor and capital saving technological processes of fashioning materials: electron-beam, laser, electroerosion, plasma-mechanical processes and spraying of powder coating on parts of machines. Production of products from metal powders will exceed 3.1-fold the volume of their production in 1980.

The five-year plan includes the chief targets for 170 scientific-technical programs, including for 41 special-purpose comprehensive programs developed and approved by Gosplan USSR, the USSR State Committee for Science and Technology and the USSR

Academy of Sciences. Their final task is introduction into the national economy of the most effective scientific-technical achievements. It is planned to conduct research on the most important and promising directions of different branches of science, ensuring the necessary inventory for the solution in the future of important social-economic and scientific-technical tasks. For the successful solution of the tasks set in the plan, it will be necessary to put an end to the dissipation of forces and resources in science and to see to it that scientific and technical solutions meet present requirements, while new equipment and technology are introduced without delays.

Large funds have been allocated for the development of science during the 11th Five-Year Plan. In 1982 alone, 23.8 billion rubles are being allocated for these ends, which is 5.2 percent more than in 1981.

Development of Material Production and Solution of Social Tasks

The party has always paid a great deal of attention to the development of material production, especially of industry, agriculture and capital construction as the bases of the economic and defensive power of the country and growth of the well-being of the workers. In this connection, the development of heavy industry is of primary importance, especially such of its basic sectors as fuel and power. The major tasks set for the development of basic sectors are due to the fact that in recent years they have started to exert a restraining influence on the development of the national economy.

Basic indicators of the five-year plan and the 1982 plan for the development of the fuel and power complex are in accord with the tasks of the Basic Directions approved by the 26th CPSU Congress [Table 3].

Table 3

	1982	1985
Electric power, billions of kwh--total including:	1,365	1,555
atomic electric power stations	107	220
hydroelectric power stations	195	230
Petroleum (including gas condensate), millions of tons	614	630
Natural gas, billions of cubic meters	492	630
Coal, millions of tons	728.3	775

The planned volumes of extraction and production of the most important fuel and power resources make it possible to provide for the further improvement of the country's fuel-power balance. In 1985, the relative share of natural gas will have been increased in it to 32 percent compared to 26 percent in 1980, while the share of petroleum will drop from 43 to 38 percent. For the purpose of raising in the future the share of coal in the country's fuel-power balance, capital investment has been increased in the five-year plan for the creation of reserves in this sector.

As a matter of fact, the entire growth of production of electric power in the European part of the country is scheduled to come from atomic electric power stations, while the increased output of thermal stations will essentially come from wide-scale use of coal from Ekibastuz and Kansk-Achinsk coal basins and of gas from Tyumenskaya Oblast.

A large increase of petroleum production will take place in Western Siberia, Komi ASSR, Kazakh SSR and Udmurtskaya ASSR, where it will increase almost 100 million tons over the five-year period.

The plan provides for the commercial development of new petroleum deposits on the basis of wide-scale use of industrial construction methods and the use of full sets of equipment. The relative share of petroleum production at comprehensively automated oilfields will reach 85-90 percent by the end of the five-year period.

There is also planned leading development of processes of deep refining of petroleum; the share of petroleum products used as raw materials in the petrochemical industry will increase significantly. During the years of the five-year plan, 16,000 kilometers of petroleum pipeline and petroleum-product pipelines will go into operation.

The development of the gas industry will be concinued at a rapid rate. The volume of gas production in 1985 will exceed the 1980 level by 45 percent. Three-fifths of gas production in the country is planned to come from the main region of development of the gas industry--Western Siberia. Consumption of oil-well gas will reach 85 percent, thanks to which its losses will be halved. It is planned to build trunk gas pipelines 48,000 kilometers in length versus the 30,000 kilometers built during the past five-year plan. The construction and start-up of five large-capacity trunk gas pipelines from the deposits of Tyumenskaya Oblast to the central regions as well as of the Urengoy-Uzhgorod gas pipelines for export needs are planned.

Production of coal in 1985 will have increased 59 million tons over 1980 as opposed to 15 million tons over the years of the 10th Five-Year Plan. Coal production in the eastern regions of the country, especially with the most effective open-cut method, will receive the biggest development. It is planned to speed up the creation of capacities at Kuzbas and the erection of installations at the Kansk-Achinsk and Ekisbastuz complexes. The size of the capital investments for these complexes will grow more than 3.5-fold and for the expansion of open-cut mining of coal in the Kuzbas--1.6-fold.

Approximately 132 billion rubles of capital investments, or 1.5-fold more than in the 10th Five-Year Plan, are being allocated for the development of sectors of the fuel and power complex as a whole during 1981-1985.

The plan provides for an increase of production output and improvement of the structure of production in sectors of the construction materials complex. In ferrous metallurgy, the output of rolled metal is planned to be increased 15 percent over 1980 and is scheduled to reach 148 million tons. At the same time about half of the increase of rolled metal should be produced at existing mills due to their modernization, reequipment and more efficient use of production capacities. There

will be a significant growth in the production of effective forms of metal products --cold-rolled sheets and dynamo steel, rolled metal with hardening thermal treatment and from low-alloy steels sheets and sheet metal with protective coatings and contoured and highly precise shapes of the rolled metal. It is planned to develop at an accelerated rate the production of economical and special types of steel type. Mass output will be started of multilayer large-diameter pipe for the construction of gas pipelines designed for a pressure of 100-120 atmospheres. The development of production of progressive and economical types of metal products in its economic effect will be the equivalent in 1985 of an 8-million ton increase in metal resources.

In nonferrous metallurgy, special attention is paid to strengthening of the ore base, reequipment, modernization and expansion of the capacities of existing enterprises. Improvement of the technology of mining and processing of ores and concentrates, greater complexness and completeness of their use, introduction of efficient and energy-saving technological processes and the start-up of machines of large unit capacity are planned. The assortment of produced products will be expanded and their quality will be improved.

During the 11th Five-Year plan, leading rates of development of the chemical and petrochemical industry are planned. The size of its production will be increased 32 percent. The production of synthetic resins and plastic will grow 68 percent and reach 6.1 million tons; the output of synthetic fiber and thread will be expanded by 36 percent. There will also be an increase in the production of small-bulk chemical products, including dyes, paint, varnish and packing materials, fat and oil substitutes for industrial needs, detergents and many other products.

The production of mineral fertilizers will undergo a 45-percent increase and comprise in 1985 something like 150.8 million tons (in conventional units). The relative share of concentrated and complex fertilizers will be increased from 83 to 91 percent over the five-year period. The production of chemicals for the protection of plants will grow 39 percent.

Machine building constitutes the core of socialist industry. It has the primary role in reequipment of the national economy. The five-year plan provides for growth of production of machine-building and metalworking products of 1.4-fold; deliveries to the national economy of high-efficiency and economical machines will be increased, and their unit capacity, operational life, reliability and quality will be upgraded; the design and production of machine systems will be continued. The productivity of the produced equipment will increase an average of 1.3-1.5-fold.

The production of equipment for the fuel-power and raw-material sectors of industry will be expanded at a high rate. The production of equipment for atomic electric power stations will grow significantly. Further expansion is planned of production of equipment for strengthening of the material-technical base of railroad transport. The production of main-line electric locomotives will grow 1.6-fold over the five-year period. The output of agricultural machinery will be increased 1.4-fold during the 11th Five-Year Plan, including agricultural implements for the K-700 and T-150 tractors--1.8 fold. Rapid growth of machine building for animal-husbandry and feed production will be continued. Machine-building production for the light and food industry and everyday appliances will grow 30 percent over the five-year

period. Production will be significantly increased of various construction materials and products of the timber, woodworking and paper-pulp industry.

During the 11th Five-Year Plan there will be retained a high developmental rate for geological prospecting work whose overall volume will increase 1.4-fold over the five-year period.

Continued growth of production of manufactured consumer goods will be achieved by light industry. Its production volume will increase 19 percent during the five-year period. It is planned to expand the production of goods that are in mass demand.

The 11th Five-Year Plan provides for a large construction program. On the basis of the accumulation fund in the national revenue and provision of a fuller balance of capital construction with the material resources and means of construction organization, the total volume of capital investment for 1981-1985 was set in the amount of 700 billion rubles, involving a growth, as already noted, of 10.4 percent; the volume of construction and installation work will grow 4 percent during the five-year period and amount to 356.7 billion rubles. Compared to Basic Directions, capital investment will be reduced 30 billion rubles.

With distribution of capital investment, it was found necessary to increase the share of funds designated for the development of sectors of the production sphere from 78 percent during 1976-1980 to 80 percent during the 11th Five-Year Plan. Capital investment for the development of industry will increase almost 23 percent and for railroad transport--22 percent; the share of funds assigned for the development of agriculture will be retained in the total volume of capital investment.

During the five-year period, it is planned to ensure the operational start-up of fixed capital with state capital investment in the amount of 627 billion rubles, or 21 percent more than in the 10th Five-Year Plan, with an 11-percent growth of capital investment. To ensure such a growth in the start-up of fixed capital with a significantly lower rate of increase of capital investment, it will be necessary to systematically put in practice a policy of reduction of unfinished construction, sharp curtailment of the number of newly started projects, a certain limitation to the construction in cities of theaters, palaces of culture, swimming pools and stadiums and a serious improvement of the organization of construction work.

The targets of the 11th Five-Year Plan are aimed at the fulfillment of the decisions of the 26th CPSU Congress in the field of the social program on the basis of dynamic development of industry and agriculture and other sectors of material production. The realization of the targets of the 26th CPSU Congress on raising the living standard of the people can be graphically seen from the following figures (see Table 4).

It is also important to note that in the 11th Five-Year Plan many social problems are solved on a qualitatively higher level. For example, in housing construction the transition to the construction of residential buildings according to new model plans with improved design of accommodations will be essentially completed. In rural localities, the relative share of construction of well-appointed houses of the farmstead type will be increased. Considerably more housing is planned to be built in the regions of the Far East and Siberia.

Table 4

	Materials of 26th CPSU Congress	Five-year plan for 1981-1985
Per-capita real income (growth in percent)	16.0-18.0	16.5
Average monthly earnings of workers and employees in 1985, in rubles	190.0-195.0	193.4
Average monthly earnings of workers and employees (growth in percent)	13.0-16.0	14.5
Average monthly earnings of kolkhoz farms (growth in percent)	20.0-22.0	20.0
Public consumption funds (growth in percent)	20.0	23.0
Goods turnover of state and cooperative trade (in comparable prices and growth in percent)	22.0-25.0	22.9
Sales volume of consumer services (growth in percent)	approximately 1.4-1.5-fold	44.3
Total area of residential buildings being opened for occupancy, millions of square meters	530.0-540.0	530.0
Preschool institutions becoming operational, millions of places	no less than 2.5	2.9
Number of students in schools and groups with extended day in 1985, millions of persons	13.5-14.0	13.7
Graduation of qualified workers from vocational and technical educational institutions	13.0	12.3
Training of specialists with higher or secondary specialized education, millions of persons	roughly 10.0	10.5
Number of hospital beds (growth in percent)	8.0-10.0	9.2

The solution of the social program will largely depend on the successful development of the agroindustrial complex and its core--agriculture. In 1985, it is planned to have the volume of agricultural production reach 147.1 billion rubles, including in 1982--136.5 billion rubles versus 122 billion in 1980. The average yield of grain crops during the 11th Five-Year Plan will amount to 18.7 q/ha versus 16 q/ha in the 10th Five-Year Plan. Major measures for strengthening the fodder base will be implemented and also on this basis for raising the productivity of animal husbandry. All agricultural production must be developed at a higher tempo. The average yearly grain harvest will grow by 35 million tons over the five-year period and meat production--by more than 2 million tons. A significant increase in the production of potatoes, vegetables and fruits must be ensured.

Strengthening of the material and technical base of agriculture will be continued throughout the 11th Five-Year Plan; deliveries of material-technical goods will be expanded. In particular, it is planned to provide 1,870,000 tractors or 20 percent more than in the 10th Five-Year Plan; in 1985 it will get 115 million tons of mineral fertilizers (in conventional units) versus 82 million tons in 1980.

It is planned to allocate almost 190 billion rubles of capital investment for the development of agriculture in its entire complex of operations, for agriculture of the RSFSR Nonchernozem Zone--about 41 billion rubles of capital investment or 27 percent more than in the 10th Five-Year Plan.

In the European part of the USSR and in the Urals due to limitation of fuel-power, raw-material and water resources and also with account being taken of the created unfavorable demographic situation, the plan primarily points to intensification of production, modernization and requipment of existing enterprises without an increase in the number of workers.

It is planned to develop at higher tempi industrial production in Belorussia, Uzbekistan, Moldavia, Tajikistan and the republics of the Transcaucasus. Leading growth of agriculture is planned for Uzbekistan, Georgia, Azerbaijan, Moldavia, Tajikistan and Turkmenia.

The growth of material production, expansion of economic ties and needs of the population require further development and improvement of the transport system. The plan for 1981-1985 designates targets for railroad, maritime, river, motor and air transport providing for the solution of the indicated tasks. All the forms of transport will be equipped with new equipment; new lines and facilities will appear (terminals, airports and the like); through movement of trains over the entire extent of the Baykal-Amur Main Line will prevail by the end of 1985. The freight turnover of all forms of transport will grow 19 percent over the five-year period, passenger traffic--15.5 percent. New specialized types of transport will be introduced. Communications, radio and television will undergo further development.

As has already been mentioned above, the sixth session of the 10th convocation of the USSR Supreme Soviet approved simultaneously with the plan the State Plan of Economic and Social Development of the USSR for 1982. It is a constituent part of the 11th Five-Year Plan and provides for the further improvement of the well-being of the Soviet people on the basis of strengthening of the material-technical base of the national economy, acceleration of scientific-technical progress and shifting of the economy to an intensive path of development. The growth of sectors of material production and raising of its efficiency will make it possible to increase the national income for 1982 by 13.4 billion rubles or 3 percent.

Industrial production in 1982 will grow by 30.4 billion rubles or 4.7 percent. The further improvement of its structure is planned. Thus, with a total growth of production of electric power of 2.6 percent, its production at atomic electric power stations will increase 24 percent. In ferrous metallurgy, there is planned leading development of production of progressive and economic forms of metal products. In the chemical industry, production of synthetic resins and plastics as well as of synthetic fibers is planned to grow at a fast rate. In machine building, production will grow of high-efficiency and economical machinery, equipment and instrumentsof boosted unit capacity and productivity. During the course of the year, it is planned to start the production of about 4,000 new kinds of machines, equipment, instruments and materials and to introduce more than 270 technological processes and measures for mechanization and automation of labor.

Major attention is given in the plan to the production of consumer goods. Production of food products, including meat and dairy products, will be increased. In light industry, with growth of production of cotton fibers of 4.6 percent, output of printed cotton fabrics will grow 6.7 percent, underwear fabrics--9 percent and satin fabrics--7.5 percent. Cultural, consumer and household articles will have a 3.4-percent greater production in 1981. Production of furniture, color television sets, chinaware, household-chemistry products and other items will be expanded.

According to the plan, the volume of agricultural products in 1982 will amount to 136.5 billion rubles, which is 10.2 percent higher than the average yearly level for 1976-1980. Growth of production and purchases of all types of agricultural products is planned. Deliveries to agriculture of equipment and mineral fertilizers are to be increased.

Capital construction will be carried out on a large scale in rural areas. For the development of agriculture in 1982, it is planned to allocate for the entire complex of operations more than 37 billion rubles of capital investment. In 1982, this will amount to 137.4 billion rubles for the development of the national economy with all sources of financing.

A further rise in the living standard of the Soviet people is planned in the annual plan. Per-capita real income will grow 2.1 percent over 1981 and public consumption funds will be increased by 4.1 percent and comprise 127 billion rubles. In 1982, more than 4 billion rubles are being allocated for new measures for raising the living standard of the people provided in the five-year plan through centralized sources. A large part of these funds will go to raising and improving wages. With the new measures, average monthly earnings of workers and employees of the national economy as a whole will reach 177 rubles. It is planned to build in the year residential houses with a total floorspace of 106.9 million square meters through the use of all sources of financing. Housing conditions will be improved for about 10 million people.

The plan provides for the further development of the economy and culture of all the union republics and economic regions.

The five-year and annual plans embody the policy of our party of undeviating social and economic progress of Soviet society. The 11th Five-Year Plan marks the conquest of new ground in strengthening economic power and raising the well-being of the Soviet people. We do not close our eyes to the fact that difficulties still remain in individual sectors of economic construction and that interruptions still occur in providing the population with meat, dairy products, cotton fabrics and other goods. Only one direction exists for the solution of these problems--growth of production, higher labor productivity and efficiency of the economy.

As L.I. Brezhnev emphasized in his speech at the November (1981) Plenum of the CPSU Central Committee, "It is necessary to back up the figures of the plan with economic and organizational-political measures guaranteeing their fulfillment. Organization, a businesslike approach and discipline--such are the indispensable conditions both at the center and locally. It is namely on such an angle of perception that the operation of all party, state and operational organs should be based."[1]

This instruction directly applies to Gosplan USSR, which must assure effective control over the observance of plan discipline, fulfillment of all targets of the five-year plan, search for reserves of production growth and constantly improve the normative base of planning.

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1. PRAVDA, 17 November 1981.

As in prior five-year periods, considerable funds will go into improvement of land whose area in 1985 will amount to 36.3 million hectares versus 29.8 million hectares in 1980.

Special attention will be devoted to ensuring the undamaged state of agricultural products. To reach these goals capital investment for creation of storehouses will increase 1.6-fold and 1.4-fold for construction of intra-farm hard-surface roads.

The reapportionment of resources allocated for the development of the agroindustrial complex in favor of sectors providing agriculture with the means of production as well as of sectors engaged in the processing and preservation of agricultural products should be emphasized as being one of the special features of the 11th Five-Year Plan. In this connection, capital investments for the development of tractor and agricultural machine building will increase 86.5 percent, machine building for animal husbandry and fodder production--49 percent, machine building for light and food industry--40 percent and the microbiological industry--45 percent. The food, meat and dairy and fish industry will undergo further development.

One can see from this what major attention is paid by the party and government to the solution of the food program, which at the present time is being put together. In L.I. Brezhnev's apt expression, the program should create a unity of efforts in agriculture itself, in its servicing sectors of industry and in the systems of procurement, storage, processing, transportation and trade of agricultural products. In other words, the food program should subordinate the operation of the said sectors to a common end aim--provision of the need of the country for foodstuffs. The task, consequently, is to ensure the stable and rapid growth of production of foodstuffs. For this it will be necessary to ably adapt work in agriculture to climatic conditions and, taking this into account, to use appropriate equipment and technology, to cultivate the most productive varieties of plants for a given economic region as well as breeds of animals, to develop land reclamation and to use fertilizers.

The five-year plan for 1981-1985 also reflects other measures for solution of the social program. Thus, as the result of growth of wages and public consumption funds, an important step will be taken toward elimination of low-income families. The relative share of families with incomes of 50 rubles per month per person will be reduced 2.5-fold over the five-year period and with incomes in excess of 100 rubles will increase 14 percent. Paying off of state internal loans will continue.

The environment exerts an influence on the social conditions of life. Consequently, the plan designates targets for protection of nature, the ground, its minerals, the vegetable and animal kingdom, the air and water bodies. It is planned to allocate for these purposes 10.5 billion rubles over the five-year period, including 2.1 billion rubles in 1982.

The 11th Five-Year Plan will continue the policy of acceleration of growth of the economic potential of the eastern regions, especially of the newly developed regions of Siberia and Kazakhstan.

In the republics of Central Asia, it is planned to use more fully labor resources and production capacities, to provide for the continued growth of cotton production and to significantly improve its quality and to speed up development of animal husbandry. Further development is planned of light and food industry, machine building and other sectors of industry.

Our people are determinedly working on the fulfillment of the decisions of the 26th CPSU Congress. L.I. Brezhnev's speech at the November Plenum of the CPSU Central Committee and the decisions of this Plenum brought out in the Soviet people a new surge of creative power and energy and further reinforced their resolve not only to fulfill but also to overfulfill the designated plans of growth of production and raising of its efficiency. In enthusiastically supporting the wise internal and foreign policy of the CPSU and the government, the Soviet people unanimously express their readiness to build up national wealth, to strengthen the defense capability of the Motherland and to actively fight for a lasting peace. The indestructible unity of the party and the people is a guarantee of new victories for our country in the building of a communist society.

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RESOURCE UTILIZATION AND SUPPLY

POWERS OF INTERDEPARTMENTAL RESOURCE COMMISSION DESCRIBED

Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 81 p 16

[Regulation Governing the Interdepartmental Commission on the Economy and Rational Use of Material Resources]

[Text] The Decree of the CPSU Central Committee and the USSR Council of Ministers of 30 June 1981 "On Strengthening the Work for the Economy and Rational Use of Raw Material, Fuel Energy and Other Material Resources," for the purposes of coordinating the work being carried out by the USSR ministries and departments and by the Union republic councils of ministers in the area of improving the utilization of raw products, materials, fuel and energy as well as for exercising direct control over the implementation of the measures outlined in this area by the party and government decisions, recognized the need to organize an Interdepartmental Commission on the Economy and Rational Use of Material Resources headed by the deputy chairman of the USSR Council of Ministers and the chairman of the USSR Gossnab. The corresponding republic, kray and oblast interdepartmental commissions were to be set up and sectorial commissions within the USSR ministries and departments.

On 30 October 1981, the first session of the Interdepartmental Commission was held and its membership included the leaders of the USSR ministries and departments, the USSR Academy of Sciences, the AUCCTU and the Komsomol Central Committee.

The Commission approved a work plan for November-December 1981 and reviewed the questions concerning an improvement in the planning and delivery of ferrous metal products considering the labor intensiveness of their production, the firming up of the natural loss rates and raising the responsibility for their correct application and for strengthening state control over the use of nonferrous metals as well as systematizing the delivery of scrap metal.

Work has been commenced by the sectorial commissions of the USSR ministries and departments as well as by the republic, kray and oblast interdepartmental commissions.

Below we publish the Regulation Governing the Interdepartmental Commission on the Economy and Rational Use of Material Resources.

The basic tasks of the Interdepartmental Commission are the following:

1) The coordinating of the work carried out by the USSR ministries and departments and by the Union republic councils of ministers in the area of improving the utilization of raw products, materials, fuel, equipment and other material resources on the basis of the most recent scientific and technical achievements and the strengthening of economy;

2) Reviewing the measures and programs worked out by the USSR Gosplan, the USSR Gosstroy, the USSR Gossnab, the GKNT [State Committee for Science and Technology], by the USSR ministries and departments and the Union councils of ministers aimed at improving the efficient use and saving of material resources as planned in the five-year and annual plans;

3) Direct control over the implementing of measures by the ministries, departments and Union republic councils of ministers in the area of the saving and rational use of material resources as outlined by the party and government decisions for the purposes of eliminating the shortcomings existing in this matter;

4) Further improving the statewide system of managing the rational and economic use of material resources.

The Interdepartmental Commission, in accord with the tasks entrusted to it, reviews and settles the following questions:

1) The development and broadening the production of economic and efficient types of materials and articles as well as an ongoing reduction in the output of products which do not meet the demands of reducing energy and material intensiveness;

2) Accelerated introduction of energy-saving, low-waste and waste-free production methods and the complete processing of raw materials;

3) Better utilization of secondary resources and industrial wastes in related sectors;

4) Replacing scarce types of products with less scarce and more economical;

5) Reducing product losses in transporting and storage and systematizing the norming of natural product losses;

6) Improving intersectorial specialization and cooperation in a direction of increasing the efficient use of material resources and in the necessary instances, the advisability and economic soundness of the established intrasectorial ties;

7) Concentrating resources in those sections of the national economy where they can provide the greatest effect as well as involving all above-norm and unused material stocks in economic circulation, reducing above-plan balances of uninstalled equipment and accelerating the turnover rate of working capital;

8) Producing and delivering to consumers materials and equipment with increased production completeness and in an assortment, quantity (volume) and batching which most corresponds to their needs;

9) Disseminating advanced domestic and foreign experience in the area of the saving and rational use of material resources and introducing progressive forms of economic incentives in this area;

10) Reducing material expenditures (in cost terms) and their influence on product (work) costs;

11) Organizing the work of the republic, kray, oblast and also sectorial commissions in the area of the saving and rational use of material resources;

12) Improving the structure of the national economy and its sectors in a direction of the greatest possible reduction in the energy and material intensiveness of production.

At its sessions the Interdepartmental Commission hears reports and statements from the ministries and departments, the Union republic councils of ministers as well as the sectorial, republic (Union and autonomous republic), kray and oblast interdepartmental commissions on the following: the elaboration and implementation of measures to ensure the rational and economic use of material resources in the national economy; on the fulfillment of comprehensive programs to save material resources, the plan quotas for the average reduction in the consumption rates and the indicators for the saving of raw materials; for observing limits on material expenditures per ruble of product (work); for incorporating in the standards and technical conditions the characteristics of product material and energy intensiveness, the requirements to raise its quality and ensure durability as well as on other questions comprising the competence of the Interdepartmental Commission;

1) It receives from the ministries, departments and Union republic councils of ministers the necessary data describing the state and level of material resource utilization in the national economic sectors;

2) It receives from the USSR TsSU [Central Statistical Administration] the statistical data needed for the work of the commission;

3) It holds meetings on questions related to increasing the efficient use of material resources, calling in for these meetings representatives from ministries, departments, associations, enterprises, organizations, scientific research institutions as well as public organizations;

4) It assigns in the established procedures to the ministries, departments and USSR Academy of Sciences the scientific elaboration of theoretical and applied problems in the area of increasing the efficient use of material resources in the USSR national economic sectors;

5) For studying the problems and preparing proposals on questions relating to the competence of the commission, it creates temporary (for a period up to 3 months) working and expert groups (with the calling in of highly skilled specialists and scientists who are released from their basic job while maintaining their basic wage);

6) It utilizes the studies by the sectorial scientific research institutes for broadly introducing them into the national economy;

7) It takes measures so that the sectorial and republic commissions for the saving and rational use of material resources make full use of the rights granted them for settling questions which are within their competence;

8) It examines questions of an intersectorial and interrepublic importance which reduce product material intensiveness.

The Interdepartment Commission is headed by the deputy chairman of the USSR Council of Ministers and chairman of the USSR Gossnab.

The membership of the Interdepartmental Commission is approved by the USSR Council of Ministers.

The members of the Interdepartmental Commission participate in meetings without the right of substitution.

The meetings of the Interdepartmental Commission are attended by the leaders of the involved ministries and departments or their substitutes and on the questions of the Union and autonomous republics, krays and oblasts by the representatives of the corresponding republics, krays and oblasts.

On questions requiring a ruling by the USSR government, the Interdepartmental Commission submits the appropriate proposals to the USSR Council of Ministers.

The decisions of the Interdepartmental Commission are issued to the appropriate organizations in the form of excerpts from the minutes of the commission meeting.

The work of the Interdepartmental Commission for the saving and rational use of material resources is carried out according to plans approved by the commission.

The ministries, departments, institutions, enterprises and organizations whose reports are to be examined at sessions of the Interdepartmental Commission submit the reports and the appropriate draft decisions to the commission and in necessary instances draft decrees or ordinances of the USSR Council of Ministers.

The materials relating to the work of the Interdepartmental Commission are prepared by the Administration for the Saving and Rational Use of Material Resources under the USSR Gossnab. This administration exercises the functions of the working body of the Interdepartmental Commission.

The decisions of the Interdepartmental Commission on questions which are within its competence are obligatory for execution by all the USSR ministries and departments, by the Union republic councils of ministers, by the organizations, enterprises and institutions.

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RESOURCE UTILIZATION AND SUPPLY

WAYS TO IMPROVE RESOURCE UTILIZATION IN FAR EAST REVIEWED

Moscow EKONOMICHESKAYA GAZETA in Russian No 45, Nov 81 p 6

[Article by N. Kalmykov, chief of the Khabarovsk Main Territorial Administration of the USSR Gossnab: "Strict Accounting for Resources"]

[Text] The significant growth planned for the 11th Five-Year Plan for the productive forces in the Far East has demanded that Khabarovskglavsnab [Khabarovsk Main Territorial Supply Administration] carry out a definite reorganization in the management and organization for material and technical supply in the region. We will endeavor to provide constant control over the economic use of the raw products, materials and fuel by the consumers as well as utilize the existing internal reserves.

In the first half of the year, for example, 107 inspections were conducted in the associations, enterprises and organizations of the region. Many serious shortcomings were disclosed particularly in setting the consumption rates for material resources. At just 18 of the inspected enterprises reserves were disclosed for the saving of raw products and materials totaling over a million rubles.

Thus, there were significant reserves at the Tungus Woodworking Combine [DOK], where the standards for the producing of mobile homes for geologists have not been revised for a number of years. This has led to an increased consumption of materials. Facts were also disclosed where the materials which were incorporated in the consumption rates were not employed in manufacturing the homes. Year after year the Tungus DOK has requested and received a total of 104,000 rubles of resources above its needs.

Inflated standards were also discovered at the Khabarovsk Aluminum Structural Elements Plant where 420,000 rubles of surplus materials were obtained in the calculation for the volume of work performed over the 5 months. The Glavsnab [Main Supply Administration] demanded a revision of the standards within 2 months and the establishing of new ones.

From the results of the inspections there was also a reduction in the resource consumption rate at the Amurskiy Metallist [Amur Metallurgical Worker] Plant (by 162,400 rubles) and at the Bureya Machine Plant (by 110,000 rubles).

The party and soviet bodies on the spot are providing great help and support to the USSR Gosnab organizations. Thus, recently by a joint decree of the Khabarovskiy Kraykom and the Executive Committee of the Khabarovskiy Kray Soviet, a kray commission was set up for the saving and rational use of material resources. This was to be headed by experienced leaders and specialists. The commission's work has significantly increased the efficiency, directness and effectiveness of the measures adopted. I would like to point out that there are substantial shortcomings in organizing control over the fulfillment of the quotas to reduce the consumption rates. Up to the present a uniform procedure and dates have not been established for the ministries and departments to set savings quotas for the enterprises. The ministries and departments do not provide copies of the quotas for the corresponding territorial USSR Gosnab organizations which are to monitor their fulfillment. The quotas of the ministries and departments issued to subordinate enterprises are not coordinated with the USSR Gosnab quotas which are set for the territorial bodies. Repeated requests to the ministries and departments have been required for them to set quotas for the enterprises to reduce the consumption rates for 1981. When they were finally set, a significant discrepancy with the USSR Gosnab quotas was discovered.

All of this has led to a situation were the enterprises with relative ease in one quarter fulfill and overfulfill the ministry quotas and do not carry out constant and systematic work to revise the norm base. Thus, the Experimental Machine Plant of Glavamurstroy [Main Amur Construction Administration] overfulfilled the quota of the Minvostokstroy [Ministry of Construction in the Far East and Transbaykal Regions] for the saving of rolled metals by 2.4-fold in the very first quarter. The Glavamurstroy of this same ministry fulfilled 4.4 annual quotas for the saving of thermal energy, the local industry administration of Amurskaya Oblast fulfilled 10 quotas over the same period while the Amurenergo RZU [?Amur Power Administration] fulfilled 5 annual quotas for the saving of boiler and furnace fuel. Many similar examples could be given.

We are endeavoring to pay constant attention also to the state of the inventories of material resources at subordinate organizations. For monitoring purposes in the territorial administration each month an analysis is made of the statistical reporting forms 1-SN and 2-SN. This provides an opportunity to promptly spot above-norm stocks and reduce them to the established level. Thus, over the first 6 months above-norm stocks valued at 23.5 million rubles were put into economic use. This was 19 percent higher than the corresponding period of the previous year.

Recently, control has been strengthened over the observance of the procedures for expending raw products and materials by the enterprises and organizations. For example, the illegal dispatch of 521,000 rubles of raw products and materials discovered in the first 6 months was withheld from the stocks of the consumers and a penalty amounting to 100 percent of the value of the raw materials was also collected from them.

Throughout the region work is developing evermore widely to use the waste products and to increase the procurement and delivery of secondary resources. Measures are being taken to broaden the types and increase the volume of services provided to consumers. Our specialists have studied and proposed using scrap metal totaling around 1,000 tons for the manufacturing of insert pieces in construction as well as 2,700 tons of waste coke for carbonizing steel in open-hearth furnaces.

At present, we have begun to build shops and sections for providing additional services to the region's consumers for the batching of drying oils and other chemicals, for preparing metal for use and in addition we are creating sorting yards for making up freight for the regions of the Far North. The opening up of these sections and shops will make it possible to save material resources and at the same time will strengthen the physical plant of supply.

We are aware that in fighting for thriftiness and economy far from everything has been done but the work has been started and the material and technical supply specialists are making a maximum effort to carry out the struggle successfully.

However, we would like to draw attention to the problems the solution to which does not depend upon the territorial bodies. In the first instance, the USSR Gossnab must probably make across-the-board inspection over the use of production and technical-end products.

Secondly, the USSR Gossnab for the purposes of eliminating duplication should probably more clearly define the control functions relating to the saving and rational use of material resources and the exercising of state control over the storage and rational use of material, fuel and energy resources.

Thirdly, the ministries and departments should be required to forward to the local territorial USSR Gossnab bodies and to the statistical administrations copies of the quotas which they have set for the enterprises in the savings area.

In our view, an affirmative solution to the listed questions will help to improve the organization of all work in the saving of material resources.

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RESOURCE UTILIZATION AND SUPPLY

ECONOMIC ASPECTS OF RESOURCE CONSERVATION EXAMINED

Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 81 pp 11-14

[Unattributed materials for use by propagandists and students in the economic education system: "To Economically Use Material Resources"]

> [Text] During the 1981-1982 academic year, the economic education system will commence an extensive study of new courses on: "Thriftiness-a Communist Trait" (for workers and kolkhoz members) and "An Economic Economy" (for specialists and leaders). The studies for the workers in these courses have been organized in accord with the Decree of the CPSU Central Committee and USSR Council of Ministers "On Strengthening Work in the Economic and Rational Use of Raw Products, Fuel, Energy and Other Material Resources."
>
> To help propagandists and students EKONOMICHESKAYA GAZETA is systematically publishing the educational materials on studying the corresponding subjects (see the special issues in Nos 39, 41, 43 and 45). In the current 47th issue of the newspaper, materials are being published on the subjects "To Save Fuel and Energy, Raw Products and Materials--The Duty of Everyone" and "Reserves for Saving Fuel, Energy, Raw Material and Other Material Resources." The publishing of materials will be continued to aid those studying the new courses.

To Economically Use Material Resources

In solving the task raised by the 26th CPSU Congress of completing in the 1980's the transition to predominantly the intensive path of development, along with raising labor productivity and the efficient use of equipment, a primary role is assigned to the economic and rational use of material resources including raw products, materials, fuel, electric power and other subjects of labor.

Material resources have a determining influence on the shaping of expenditures for product output. In the costs of industrial products, their share is 73 percent and in the structure of expenditures for carrying out construction and installation work, around 53 percent. From this it follows that the main reserves for reducing product costs involve the economic use of material resources. Under the conditions of the intensification of the economy, the growth rate in product output and the well being of the people depend largely on this.

The demand for the thrifty expenditure of all existing resources as a required condition for efficient socialist management was emphasized by V. I. Lenin in the first months of the establishing of Soviet power. Thus, in the draft government decree on fuel (May 1918), he pointed to the necessity "of working out immediately a detailed draft of specific practical rules which would pursue the aim: 1) of strengthening fuel output, 2) saving its consumption, 3) rationally allocating the technical forces over the fuel-producing regions or districts" (PSS; [Complete Collected Works], vol 36, p 371).

V. I. Lenin gave great importance to thrifty economic management and to the economic indoctrination of the workers as the real masters of production. "We are the masters of industry, the masters of grain, the masters of all products in the nation. When this awareness permeates the working class profoundly, when by his experience and by his work does he increase his forces by 10-fold, only then will all the difficulties of a socialist revolution be overcome," said V.I. Lenin at the Fourth Conference of Moscow Trade Unions and Factory-Plant Committees in June 1918 ([PSS], vol 36, p 466). In the article "The Great Initiative" (1919), he emphasized that communism starts when a concern is shown by the rank-and-file workers for increasing labor productivity, for safekeeping each pood of grain, coal, iron and other products received not by the workers personally and not by their "near ones" but rather by their "distant ones," that is by society as a whole (PSS , vol 39, p 22).

Production of Basic Fuel, Energy and Raw Material Resources in USSR

	1970	1980
Electric power, bil. kwh	741	1295
Oil, including gas condensate, mil. tons	353	603
Gas, bil. m^3	198	435
Coal, mil. tons	624	716
Iron ore, mil. tons	197	245
Rolled ferrous metals, mil. tons	92.5	118
Cement, mil. tons	95	125
Raw cotton, mil. tons	7	10
Wood, mil. m^3	385	357

Over the Tenth Five-Year Plan, the appearance of our economy has changed and a strong upsurge has been achieved in all the national economic sectors on a new technical basis. In 1980, the nation's social prouduct surpassed the 1928 level by almost 62-fold. This required a gigantic rise in the production of raw material, fuel and energy resources. In 1980, the nation produced: 716 million tons of coal, 603 million tons of oil (including gas condensate), 435 billion m^3 of gas (a total of 1.9 billion tons of fuel units) and 245 million tons of iron ore. The output of rolled ferrous metals reached 118 million tons, cement 125 million tons, the gross harvest of raw cotton was 10 million tons and lumber felling reached 357 million m^3. Each day our nation consumes 1.5 billion rubles worth of raw products, materials, fuel and energy. The sectors involved in producing material resources employ around 75 percent of the productive capital and over 45 percent of all the employees in the national economy.

With such a scale of production, the importance of saving material resources at every work area has increased many-fold. While in 1970 a 1 percent reduction in material expenditures as a whole for the national economy would mean a rise in national income of 3.6 billion rubles, in 1975, 4.9 billion rubles, in 1980, the figure is already over 6 billion rubles. By the end of the new five-year plan,

a 1 percent savings in material expenditures will mean a rise of approximately 7 billion rubles in national income.

In the 1980's, the national economy's requirements for fuel, energy, metal and other material resources will grow. The satisfying of these requirements merely on an extensive basis, by constantly increasing the output and production volumes of fuel, energy, material and raw product resources will be come virtually impossible and economically inefficient. The task has been posed of providing their more rational utilization and increasing the end results of production with the existing resources and minimum expenditures.

The rational utilization and saving of material resources are an important area for intensifying production. A reduction in material expenditures reduces the need for raw products, materials, fuel and energy and at the same time makes it possible to reduce the capital expenditures on producing the raw materials and turning out equipment for the raw material and extracting sectors; labor resources going into these sectors are also reduced.

To thriftily consume raw products and materials, to reduce wastes and eliminate losses mean, consequently, to save the labor of millions of people and billions in capital investments, to increase product output and protect the environment. The broader opportunities for increasing the well being of the people depend largely on this, too.

Expenditures on measures to save material resources in production at present are approximately 2-fold less than the expenditures on increasing the output of fuel, raw products and other types of material resources. The effectiveness of such measures is growing.

Calculations indicate that while 15 years ago 2 rubles of capital investments were spent on producing 1 ruble of raw materials, at present the figure is already 4 rubles of investments and in following years the figure will be even more due to the deterioration of the geological mining conditions and the tapping of deposits in new economic development areas in the North and East of the nation. During the previous five-year plan, expenditures on producing a ton of oil in our nation were over 2-fold more than at the beginning of the 1970's and during the current 5 years they will increase even more. Proportional capital investments for iron ore mining have more than tripled in 15 years.

The carrying out of the measures adopted in the Tenth Five-Year Plan to increase production efficiency has provided an opportunity to save 11.4 billion rubles of raw products, materials, fuel, energy and other subjects of labor. Approximately one out of every 6 rubles of increase in industrial output over the 5 years has been obtained from saved material resources. In the 11th Five-Year Plan there will be an even greater turn toward intensive methods for utilizing the material resources and an increased share in the growth of the production volume from the saving of them.

However, the reserves for saving material resources are still insufficiently utilized. As L. I. Brezhnev pointed out in the report at the 26th Party Congress, in comparison with the best world indicators, we spend more raw materials and energy per unit of national income. Therefore there is an opportunity to significantly increase the output of end product from already existing resources.

Scientific and technical progress opens up ever-new opportunities not only to create new sources of raw materials but also, and this is particularly important, for the rational and economic consumption of material resources, for the complete and integrated processing of the raw materials and for creating and employing resource-saving equipment and production methods.

The Basic Directions for the Nation's Economic and Social Development have set the task of thriftily utilizing the material resources and continuing work in the area of the broader use of secondary material, fuel and energy resources in economic circulation.

Specific measures for the national economic sectors have been outlined in the decree adopted on 30 June 1981 of the CPSU Central Committee and the USSR Council of Ministers "On Strengthening Work in the Area of Saving and Rationally Utilizing Raw Product, Fuel, Energy and Other Material Resources." Each Soviet person, the decree states, should take an active part in the struggle for thriftiness and savings in production and everyday life and make his specific contribution to this nationwide cause.

In the nation's labor collectives, a socialist competition has developed widely for savings and thriftiness. Of important significance is the All-Union Social Review of the Efficient Use of Raw Products, Materials, Fuel and Energy Resources to be conducted in the 11th Five-Year Plan. It is a matter of honor for each worker, kolkhoz worker and specialist to take an active part in this review and to make his own contribution to the treasurechest of the thrifty. Here it is important to know the location of reserves, the directions for seeking them out and the ways to realize them.

Basic Areas for Saving Material Resources

Work in the area of saving material resources is most effective when it encompasses all stages of the production process. But here the main thing is to bring about a reduction in the expenditures of material resources for each unit of produced product. Here it is important to increase the output of end product on the basis of the complete and integrated utilization of the raw materials.

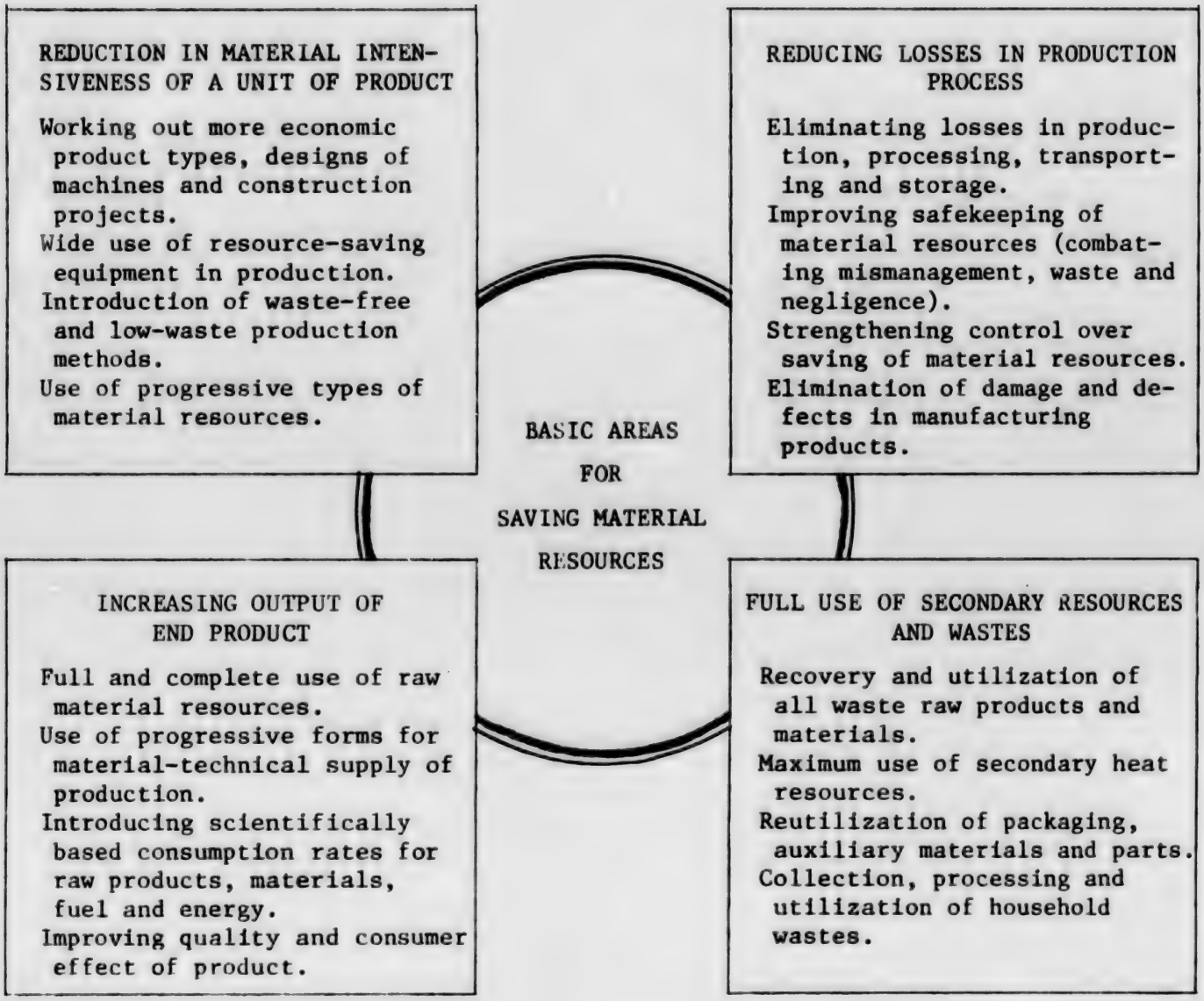
The eliminating of losses is of great importance in the output, processing, transporting and storing of material resources. Finally, it is essential to make complete use of secondary resources and waste products.

The task is to increase the end results more rapidly than the expenditures so that in each stage the maximum possible product output is attained. This is the intensive way of utilizing raw products, materials, fuel and energy.

The basic areas for saving material resources are reflected in the diagram. Let us take them up in more detail. [See the diagram on following page.]

Reducing Material Intensiveness of Products

Material intensiveness reflects the amount of the expenditures of raw products, basic and auxiliary materials, fuel, energy and preassembled articles on producing the product.



For the national economy as a whole, this indicator is defined as the value of the material expenditures (minus amortization) per ruble of national income. For the sectors, associations and enterprises material intensiveness is calculated per ruble of net product. In the sectors which produce a mass uniform product, this is determined as the amount of raw products, materials, fuel and energy in physical units per unit of product. For example, ore consumption per ton of iron or feed per quintal of milk.

In many sectors, primarily in machine building and construction, a reduction in material expenditures is achieved as a result of the elaboration and utilization of more economic types of product, machine designs and construction projects. A reduction in the weight specifications of products, equipment and projects under construction without a relaxing of quality is one of the indicators of their high technical level and greater intensification. Certain types of industrial and construction products still have high material intensiveness. In reducing this a great deal depends upon the designers, specialists, scientists and worker-innovators.

It would be possible to give many examples of successful work to lower the weight of products with a simultaneous improvement in their quality. Thus, the gas turbines produced by the Urals Turbomotor Plant and the new electric pipe welding units produced by the Elektrostal' [Electric Steel] Heavy Machine Building Plant have a lower proportional material intensiveness in comparison with foreign models. During the 11th Five-Year Plan there are plans to reduce metal consumption for turning out many product types at Uralmashzavod [Urals Machinery Plant]. Thus, the proportional metal intensiveness of the following types of machines is to be reduced:

	1981	1985
Excavators (tons/m^3)		
ESh20/90	106.5	85
EKG-5A	34	31.6
Roasting machine		
OK-520 (tons/m^2)	12.1	8.4

As a whole for the nation during the 11th Five-Year Plan, metal intensiveness of machines and equipment will be reduced by an average of 12-15 percent. The basic savings in ferrous metals in machine building is to be obtained from this.

The improved design data of products in other industrial sectors, the use of progressive layout and architectural plans in construction and the optimizing of the routes of pipelines and roads will also contribute a major national economic effect.

An important area in the saving of material resources is the extensive application of resource-saving equipment. The use of energy-efficient machines and mechanisms which possess high productivity makes it possible to significantly reduce the consumption of fuels and electric power. Progressive types of equipment ensure an increase in the output of high quality product with reduced expenditures of raw products and materials.

In replacing a gasoline engine with a diesel one, fuel consumption in motor transport is reduced by more than one-quarter. At the same time diesel engines are becoming more economic.

Thus, the YaMZ-240B diesel engine which is produced by the Yaroslavl' Avtodizel' [Automotive Diesel] Production Association for the Kirovets tractor, as a result of modernization, has made it possible to reduce fuel consumption per hour from 55 to 54 kg. Such an engine will save 10 tons of fuel alone prior to its planned major overhaul.

In agriculture, there is to be increased use of modern high-powered tractors capable of performing several farming operations in one pass. As a result labor, fuel and metal are saved and the time of performing the work is shortened.

The consumption of raw products, materials and fuel is significantly reduced with the introduction of progressive waste-free and low-waste production methods. In machine building this is precision casting and the use of cold stamping, in metallurgy this means continuous steel casting, in woodworking gang sawing, in the textile industry the production of nonwoven materials and in construction site-cast methods for erecting the buildings.

For example, at the Novolipetsk Metallurgical Plant for the first time in world practice a large industrial complex has been put into operation where all the steel is continuously cast. Continuous casting machines for billets of the curvilinear and radial types make it possible to save up to 20 percent of the metal.

As a whole for the nation in the 11th Five-Year Plan we intend to bring continuous steel casting up to 35-37 million tons. This will reduce metal losses and increase the output of merchant bar products by 2 or 3 million tons from the same quantity of steel.

One of the most important ways for reducing material intensiveness is to employ progressive types of material resources. Their use provides an opportunity not only to reduce the expenditure of raw products and materials but also to reduce labor intensiveness of the articles and increase the equipment load factor.

Over the 5 years, there are plans to increase, for example, the production of powder metals by 3-fold. It has been estimated that every 1,000 tons of this material will replace 2,500 tons of rolled metals and will free 80 metal-cutting machines and 90 skilled operators. The durability of products made from the powders is almost 2-fold greater.

The use of polymers not only saves metal but also makes it possible to employ fundamentally new design solutions. Every ton of plastics frees from 3 to 5 tons of steel in industry, agriculture, construction and transportation. The weight of machines is lightened and this, in turn, leads to a savings in fuel and energy in the operating process. Moreover, the output of 1 ton of plastic products requires an average of 540 man-hours less than the production of the same number of pieces from metal and 2-3-fold less energy resources.

As can be seen from what has been said, in reducing material intensiveness of major importance now is the use of technical innovations in production and in every job. For this reason it is important in practice to strengthen the daily ties between the scientific and labor collectives, to more widely set up creative brigades consisting of workers, specialists and scientists and develop initiative in seeking out reserves.

Increasing the Output of End Product

As a rule, a natural raw material has a multicomponent nature. Scientific and technical progress makes it possible to produce an ever-broader assortment of products from the same type of raw material. For this reason it is important to ensure the complete and comprehensive utilization of the raw material in its output and processing.

According to the estimates of specialists, over 20 percent of the industrial product is produced in integrated production based on the utilization of the same initial raw material. In a number of sectors, the side products significantly exceed the basic one, for example, by 5-5.5-fold in nonferrous metallurgy and by 4-5 and more fold in the chemical industry.

At the Ust'-Kamenogorsk Lead and Zinc Combine, 17 components are extracted from the contained 20 and at the Chimkent Lead Plant imeni M. I. Kalinin, 14 out of 15. For the sector the effect of this runs into many hundreds of millions of rubles annually and makes it possible to save tens of billions of rubles in capital investments which would be needed in building special enterprises to produce the side products.

Substantial reserves for the complete and integrated utilization of raw materials are also to be found in the woodworking, food and light industries, at the enterprises of the building materials industry and in other production sectors.

Ensuring a normal production pace is an indispensable condition for the rational and economic utilization of material resources. Here a great deal depends upon the use of progressive forms for material and technical supply of production. The 26th CPSU Congress set the task of increasing the role and responsibility of the material and technical supply system for the rational utilization and saving of material resources and for the continuous supply of the national economy with raw products, materials, equipment and spare parts.

Deliveries are being developed for direct long-term economic ties. The volume of these deliveries over the years of the Tenth Five-Year Plan rose by 1.5-fold.

During the 11th Five-Year Plan, direct ties should become the rule in relationships between suppliers and consumers. Evermore widely found will be the guaranteed comprehensive supply of enterprises and the supplying of construction workers with materials in accord with the demand set in the plans and estimates.

Significant amounts of material resources are concentrated in the inventories in the national economic sectors. In 1980, their amount (without the kolkhozes) exceeded 323 billion rubles.

Experience has shown that the concentration of stocks at enterprises in the USSR Gossnab system and the preparation of materials for direct consumption provide an opportunity to reduce production stocks at the consumers and to accelerate the turnover rate of material resources.

In the leading collectives, dependable supply of raw products, materials, tools and preassembled articles for the work areas also makes it possible to better utilize the material resources.

At the basis of a rational organization for the movement of material resources and their utilization lie calculations for the demand for them in each production element. It is impossible to do this without scientifically based consumption rates for raw products, materials, fuel and energy. The workers and specialists take an active part in reducing the consumption rates.

Thus, at the Minsk Spring Plant of the BelavtoMAZ [Belorussian Automotive Plant] Association, due to using economic types of rolled metals it has been possible to reduce the metal consumption rate by 4.2 percent. As a total over the previous 5 years the plant collective saved 12,000 tons of rolled metal.

An improvement in the quality and consumer effect of a product also leads to a savings in material resources. High quality means the saving of labor and material resources. As an example, increasing tire life from 30,000 to 80,000 km is the equivalent of more than doubling their output virtually with the same resources. Particularly effective are the increased reliability and durability of the machines and equipment and shortening the time for the processing of agricultural raw materials, for example, sugar beets. This makes it possible to prevent a deterioration of quality.

Reducing Losses in the Production Process

A substantial source in the saving of material resources is the eliminating of losses in their output, processing, transporting and storage. According to the estimates of specialists, due to this source it would be possible to save up to 20 percent of the entire savings of fuel and energy resources. Here many fewer expenditures are required than in utilizing the new equipment or production methods. It is essential to strictly observe the rules for transporting, packaging, storing and shipping the products.

A portion of products in transporting and storage is exposed to external conditions and changes weight because of natural factors. With an improvement in the equipment and production methods, such losses are steadily reduced. For this reason it is essential to promptly revise the natural loss rates. At present, measures have been provided for material liability for the incorrect application of natural loss rates.

On many farms there are great losses of agricultural products in their harvesting, preparation, storage and transporting, in the trade network and other elements of the agroindustrial complex. To close off all the channels of these losses means to make a significant contribution to improving food supply for the public and raw material supply for industry.

Improving the safekeeping of material resources is an important area in all the efforts for savings. This is related to instilling a truly economic attitude toward national wealth in each worker. A great deal also depends upon the quality of planning, the norms, the organization of economic ties, the observance of state planning discipline and increased responsibility for the assigned job. Thus, a lessening of delivery discipline leads to irrational substitutions of raw products and materials. The use of inflated consumption rates leads to the formation of above-norm material inventories. Of enormous significance is improved organization in the warehouse and weighing systems. In each area of production concern should be shown for the protecting of socialist property and this is the duty and obligation of all workers.

The carrying out of a broad range of measures to save material resources is closely tied to strengthening control over the saving of raw products, materials, fuel and energy. The 26th Party Congress emphasized that no violation and no instance of abuses, wastefulness or lack of discipline should be skipped by the watchful eye of the people's controllers. The decree adopted by the CPSU Central Committee "On Further Improving Control and Checking Execution in Light of the Decisions of the 26th CPSU Congress" pointed out that it is essential to more fully utilize the opportunities for involving the broad masses of workers in directly exercising control in all spheres of production life.

The losses of material resources in the production process are often caused by violations of technological discipline and by poor quality work. For this reason the elimination of damaged products and defects in manufacturing makes it possible to more fully utilize the material resources.

The Armelektroapparat [Armenian Electrical Equipment] Association has succeeded in reducing losses from damage during the years of the Tenth Five-Year Plan by almost 3.5-fold, the number of complaints has been reduced by more than 6-fold while the total fines for deviations from the technical and normative specifications have been reduced by 4.4-fold. The association applies cost accounting claims against the production subdivisions for the nonfulfillment of obligations and for poor quality of the products.

Reducing the losses of material resources depends literally upon each person. With the achieved production scale, not to lose a drop of fuel, not to waste a kilowatt hour of electric power, not to break window glass or brick at a construction site and not to let a single potato or head of cabbage spoil--all of this means to safeguard and add to our social wealth.

"Losses," said L. I. Brezhnev, "do not occur spontaneously and there are specific persons to blame. We have been lenient with these guilty parties. On the other hand, we still do not sufficiently encourage those who know how to save raw products, fuel and energy, those who are able to save each state kopeck. This must be done, this must be done without fail, comrades. Our economy with good reason is called an economy of the people."

The Full Use of Secondary Resources and Waste Products

In the 11th Five-Year Plan, more attention has been paid to widely involving secondary material, fuel and energy resources as well as household wastes in economic circulation.

Thus, in machine building the use factor for rolled metal products should rise from 0.72-0.73 up to 0.78-0.79. This will make it possible to put several million tons of metal into economic circulation. At the same time the problem remains of employing commercial scrap metal.

The Volga and Zaporozh'ye motor vehicle plants have drawn up albums of reusable scrap metal and the production route for using them has been given. As a rule, the usable scrap is selected at the work area.

According to estimates, the resources of reusable scrap metal are 2- or 3-fold more than the amount reprocessed. The USSR Gossnab has worked out and is implementing a special program of measures to broaden the use of this source of metal for ensuring the needs of the national economy. Scrap non-ferrous metal is particularly valuable.

In saw milling, 35 percent of the wastes is formed from all the used wood, including 25 percent in manufacturing ties, 60 percent for plywood and 65 percent for matches. In timber felling at least 10 percent of the cut wood is wasted. The advances in wood processing make it possible to employ these wastes for making pulp, chipboard and other types of panels. The wastes in panel production can be pelletized and used as production fuel.

Secondary raw materials are not inferior to the natural ones and the task is to seek out and find their most rational application.

Thus, at the Krengol'mskaya Manufaktura Combine, a special shop manufactures around 100 types of articles from the reusable raw product and materials wastes. Each year the enterprises of the Estonian Ministry of Timber, Pulp and Paper and Wood Processing Industry utilize over 100,000 m^3 or one-quarter of the total amount of waste wood.

The maximum utilization of secondary thermal resources is a major reserve for saving labor, capital investments and energy sources themselves. Each year the nation creates approximately 350 million gigacalories of secondary energy resources in consuming the fuel and energy resources.

In ferrous metallurgy during the five-year plan there are plans to put into operation around 200 evaporation-cooling waste heat units, waste-heat boilers, converter gas coolers and gas waste-heat compressorless turbines. As a result, by 1985, the sector will save 8-10 million tons of fuel units due to the secondary sources.

For utilizing the low-potential heat contained in fan exhausts at industrial enterprises, there are plans to put into operation equipment which will make it possible to save 7.5 million tons of fuel units in 1985.

Multiple reutilization of packaging, auxiliary materials and spare parts is a significant reserve for savings. The expenditures for the packaging system are rather great. The ministries and departments receive packaging with a total value of 4.6 billion rubles. The wooden crating recalculated in terms of logs is 75.1 million m^3. As a whole for the nation, 35 percent of the need for this is satisfied by reused crating. In other words, the savings is almost 30 million m^3 of lumber.

Good experience in utilizing reusable crating has been acquired by the labor collectives of the USSR Ministry of Automotive Industry, the Ministry of Tractor and Agricultural Machine Building and the Ministry of Construction Materials Industry.

The labor collectives of the automotive plants and other enterprises in the sector have determined in the 11th Five-Year Plan to abandon single-use wooden crating by introducing reusable types and containers. The AvtoGAZ [Gor'kiy Automotive Plant] Association, as a result of this, has reduced the expenditure of lumber by 25 percent. Soyuzveloprom [All-Union Main Administration for the Bicycle Industry] has converted to the transporting of bicycles in collapsible metal containers.

In 1980, the share of auxiliary materials was 4.3 percent in the costs of industrial product. This is an enormous amount exceeding 23 billion rubles. The thrifty use of auxiliary materials depends primarily upon the brigade and on each worker.

Enormous amounts are spent on the production and installation of spare parts. In the manufacturing of spare parts in the automotive industry almost as much metal is consumed as is spent on the production of the motor vehicles themselves. The advances of modern science make it possible to organize the rebuilding of parts so that the service life of the rebuilt part is greater than a new one, for example, in spraying with powders of superhard alloys. This method is widespread in the

automotive industry and at the enterprises of the USSR Goskomsel'khoztekhnika [State Committee for Supply of Production Equipment for Agriculture].

Household wastes comprise a very valuable composite raw material for processing. It has been estimated that each day calculated per urban family, 4 or 5 kg of solid wastes are formed. As a whole for the nation each day 40 million tons of such wastes are formed. Each ton of such raw material contains up to 200 kg of ferrous and nonferrous scrap metal, a great deal of waste paper, waste textiles, glass and up to 700 kg of energy resources. Also effective is the use of household waste food.

During the years of the 11th Five-Year Plan the scale of work to put household wastes to use should rise sharply. By 1985, the procurement of waste paper will increase by 3-fold. The reprocessing of secondary textile raw materials at the enterprises of the USSR Gossnab will double over the five-year plan, for secondary polymer raw materials the rise will be by 10-fold and for waste paper by 50-fold. A large industry which processes secondary raw materials is to be created. There is to be a significant improvement in the organization of the collection and procurement of secondary resources in the cities and in rural localities.

A creative search for ways and methods to save material resources, a considerate attitude toward common property, thriftiness at each work area, the rational utilization of valuable materials in everyday life and intolerance of any instances of mismanagement and wastefulness will make it possible to activate significant reserves for reducing material expenditures and to broaden the possibilities for the growth of the people's well being.

Controlling the Saving of Resources

In the advanced collectives of the nation, the work to save raw products, fuel and energy is carried out purposefully and daily on the basis of the broad introduction of scientific-technical achievements and cost accounting with all the workers being involved in this. The counterplans and socialist obligations are aimed at strengthening economy and mobilizing the existing reserves.

In accord with the decree of 30 June 1981, the indicators which describe a reduction in the material expenditures and the saving of other resources as well as the volume of additional product output manufactured from the savings are to become one of the most important criteria in working out and assessing the fulfillment of the counterplans and in summing up the results of the competition.

In the report at the 26th Party Congress, L. I. Brezhnev had high praise for the experience of the labor collectives in the Urals and Kuznetsk Basin in the saving of metal, fuel and energy resources.

The collectives of the leading industrial enterprises and construction projects in Chelyabinskaya Oblast have acquired valuable experience in the rational and thrifty use of metal and in reducing losses and wastes in all the stages of production and consumption, from smelting to the manufacturing of the end product. A mass nature has been assumed by the movement to improve quality and broaden the assortment of metal products, to reduce the metal intensiveness of machinery, equipment and structural elements and to improve the production operations.

It has become a tradition to hold social reviews to improve the quality and use of metal products at the oblast's enterprises. For example, 138,000 workers participated in such a review in 1980. They submitted over 11,000 proposals the implementation of which will ensure a savings of 300,000 tons of ferrous metals.

The creative brigades have become widespread and these are set up to solve specific problems and seek out concrete reserves for improving the quality of metal products and their efficient use. These are organized from production innovators, engineers, technicians and scientists. The producers and consumers of the metal work jointly. At present there are over 2,000 such creative collectives.

In the oblast there has been widespread support for the movement to cast metal strictly of high quality and with minimum expenditures. The initiators have been the steelcasters M. Il'in and P. Satanin. At present, their example is being followed by around 4,000 brigades.

In machine building the emphasis has been put on the development of new, more reliable and durable machines, instruments and mechanisms, on reducing wastes, on introducing surface-hardening production processes for the pieces and the manufacturing of them by powder metallurgy methods. The Miass motor vehicle builders have been the initiators of part certification for metal intensiveness. Their example has been followed by 26 enterprises. As a result in 1980 alone, around 3,000 tons of rolled steel were saved. Twenty-four plants have worked out and introduced a standard for efficient metal utilization.

In the 11th Five-Year Plan there is to be a significant increase in the output of steel and rolled products with high consumer qualities. In metallurgy they plan to develop the production of over 100 new steel grades, an equal number of economic rolled steel shapes, to increase the share of products with the state Quality Mark by 1.5-fold and ensure conditions for the saving of around 700,000 tons of ferrous metals in the national economy.

In Kemerovskaya Oblast the famous coal mining masters, Heroes of Socialist Labor, G. Smirnov, V. Devyatko, I. Rogovskiy and N. Putra, the famous metallurgical workers A. Nechay and V. Solomin, the builders of the Western Siberian Railroad V. Seryapov and N. Volkov, and thousands of other workers and pacesetters in the chemical industry, light industry and agriculture continue to struggle successfully to further the movement for the saving of fuel and energy resources.

Resources can be saved in all stages of their output, processing and consumption. Common to all the enterprises and organizations are such areas of work as improving norm setting for the consumption of fuel and electric power, the introduction of effective accounting and control systems, the organizing of a competition for individual and collective personal savings scores and improving moral and material incentives. In working out and introducing the organizational and technical measures, specific tasks are taken into account.

Thus, in the mines and enriching plants, measures are implemented to reduce the specific energy intensiveness in the mining and processing of the coal, for saving electric power by putting a maximum load on the fully mechanized faces, to reduce coal losses underground on the basis of introducing progressive cutting methods and for reducing coal consumption in the production and technical needs of the mines.

During the stage of transporting and storing the coal, a great effect is achieved by reducing the consumption of diesel fuel in hauling the coal and reducing losses by compacting the coal in the cars, improving its storage at storage areas and reducing the number of transshipments to different types of transport.

At the industrial enterprises, particular attention is paid to improving the production processes and reducing idling operating time of the equipment, to introducing new equipment and installing optimum capacity engines, to increasing the heat reutilization factor and to reducing losses of electric and thermal energy due to preparing the production areas for operating under winter conditions.

In construction, the saving of fuel and energy resources is achieved by shortening the construction times, by installing meters and automatic shut-down devices for welding equipment and the engines of construction mechanisms for the purpose of preventing their idling and the introduction of new efficient thermal insulating materials.

During the 11th Five-Year Plan in Kemerovskaya Oblast they plan to reduce coal mining losses by 6.8 million tons and save at least 1 billion kolowatt hours of electric power, 2.6 million gigacalories of thermal power, 560,000 tons of fuel units and 42,000 tons of gasoline and diesel fuel.

The experience of the leading collectives indicates that a great effect can be gained from the socialist competition for personal savings scores. These are creatively employed in the collective of the Moscow Elektrostal' [Electric Steel] Plant imeni I. F. Tevosyan. Here the brigade of the steel caster and deputy of the USSR Supreme Soviet and winner of the State Prize A. Koroten'kov and the senior shift foreman V. Naumochkin have jointly been the initiators of "Personal Effectiveness Scores for All Brigades and Workers and a Creative Plan for Each Specialist." The value of this initiative is that the personal creative plans for the specialists are combined with the brigade's obligations and are intercoordinated.

The brigade of A. Koroten'kov is competing with the brigade of his shift partner Yu. Tikhomirov. Both brigades operate the same furnace and cast the same metal grades. Here are how their work results appear for the 9 months of 1981: [See the table on following page.]

As can be seen, both brigades work well and overfulfill the plan. But if the work results are compared for the savings of just material resources, it turns out that the brigade of Yu. Tikhomirov has achieved a somewhat greater savings in alloying materials in comparison with the brigade of A. Koroten'kov. Its contribution to the effectiveness count for this factor is 4,500 rubles more. However, a comprehensive approach to the estimate, considering the indicators for losses from rejected product, changes the evaluation of the achieved results.

The brigade of A. Koroten'kov has achieved an above-standard reduction in losses from rejected product while the brigade of Yu. Tikhomirov has not kept within the standard.

As a result, if one takes only these indicators, then to the score of the first brigade will be a savings of 31,372 rubles (30,128 + 1,244) and to the score of the

Personal Savings Score for 9 Months of 1981

Effectiveness Indicators	Unit	Brigade of A. Koroten'kov	Brigade of Yu. Tikhomirov
Output of above-plan metal	tons	38.6	14.6
	rubles	1,158	438
Reduction in level of rejected product (standard of 0.55%)	%	0.44	1.17
	rubles	1,244 savings	34,710 overexpenditure
Savings in alloying materials	kg	43,534	43,981
	rubles	30,128	34,657
Casting of grade metal	%	94	82.7
	rubles	231 savings	88 overexpenditure
Total savings		32,761	297
Coefficient for utilization of furnace designed capacity		1.7	1.7

second there has even been an overexpenditure of 53 rubles (43,710 - 43,657). Losses from rejected products in production fully absorbed the effect achieved from the savings in alloying materials.

The support and greatest possible dissemination of experience in leading collectives, pacesetters and production innovators and a creative search for ways and methods for savings are a most important reserve in the rational utilization of material resources.

Improving the Norm System

The decree of 30 June 1981 envisages measures aimed at increasing the mobilizing role of standards and norms in the struggle for savings and thriftiness. Among them the following are of the greatest significance.

In the first place, the range of material resources has been broadened for which centralized quotas have been set for an average reduction in the consumption rates. Thus, in machine building and metalworking this product range has been broadened from 8 items in 1975 to 22 in 1980. As a result, the extent of coverage by savings quotas has reached 60-65 percent of all the material expenditures in this sector.

Secondly, the very understanding of a standard has been altered. Previously, the maximum acceptable expenditures of raw products, materials, fuel and energy for producing a unit of product or work was considered to be the standard. Such an understanding of standards reduced their mobilizing role in assuming a voluntary element in the setting of its level in the planning quotas. However, a standard is a directive indicator for the consumption of material resources in producing a unit of set-quality product or work. It can and must be set uniformly in having an active impact on the expenditure level and restricting expenditures.

Since the five-year plan is the basic type of planning document, the expenditure standards for the most important types of materials are set in the five-year and annual plans in physical units per unit of product or work.

A procedure has also been instituted whereby individual standards have been centrally set for the most material-intensive products. Thus, an end has been put to those shortcomings which have led to the elaboration and use of inflated standards at the enterprises and associations. Material liability has been introduced for the overexpenditure of raw products and materials and overexpended materials, fuel and energy are paid for at increased prices and rates.

The USSR Gossplan, in outlining a methodology for the setting of standards, has instituted a system of consumption rates for raw product, fuel, energy and other types of material resources as well as a procedure for improving these. It has been established that quotas for an average reduction in the consumption rates of raw products, materials, fuel, thermal and electric power in production are to be set for the period being planned in the state plans for Soviet economic and social development in a running total in percent of the level of the base year standards (the last year of the previous five-year plan). Correspondingly the fulfillment of the quotas for the average reduction in consumption rates is to be assessed in a running total in relation to the base year.

Let us give an example. In 1970, for a given group of products according to the established average rates some 50 kg of rolled metals are to be consumed for a product. The quota for the 11th Five-Year Plan is to reduce the consumption rate for this metal by 20 percent, or to bring this to 40 kg. In each year of the five-year plan, the enterprise will compare the set annual rate and actual consumption with the base norm and not the previous year, that is, with the 1980 rate.

Such a method for evaluating the fulfillment of quotas to reduce the rates will create an interest in realizing the reserves for saving as quickly as possible and not defer their use to the end of the five-year plan.

Along with the consumption rates for material resources in basic and auxiliary production, a system of norms and indicators is also being established for the utilization of material resources along with consumption rates for repair and operational needs in construction.

Any savings can be determined only when the consumption of the materials, raw products or fuel has been established by a standard which acts as an elementary cell of the national economic plan.

In the five-year and annual plans, for the industrial, construction and transport ministries, the associations, enterprises and organizations, quotas will not be set for product (work) costs and within these quotas a limit (maximum level) for material expenditures in cost terms per ruble of product (work). The planning of costs and a limit for material expenditures will help to increase the overall management level in the sectors, associations and enterprises. A limit on material expenditures makes it possible to better coordinate the cost and cost accounting measurements with the physical indicators for the saving of the subjects of labor.

Plan standards are also to be set for the inventories of raw products, materials, fuel and finished products. Here standards are to be set separately for inventories for consumers at the USSR Gossnab depots and warehouses and for suppliers.

At the enterprises important work is being carried out to bring the consumption rates for material resources down to the level of the brigades and executors.

Thus, at the Novaya Kakhovka Electrical Machine Building Plant, on the basis of a system of progressive technical and economic standards and norms, standards are being worked out and introduced for the types and expenditures of raw products, materials and energy. These are being provided to each brigade that operates on cost accounting.

The setting of standards is linked to cost accounting indicators and to an evaluation of activities. For measuring the end result of a brigade's work, an evaluation is applied for the efficiency of material expenditures for manufacturing the articles, pieces and assemblies using a material intensiveness indicator as well as the use factor for metal and other materials.

The strict observance of the consumption rates and inventory norms, the set limits for material expenditures and indicators for the use of raw products, fuel, energy and materials involves a further rise in the role of specialists and leaders in revising the obsolete standards and norms for consumption and inventories of material resources. The production, design, engineer, power and economic services of the enterprises and associations as well as innovator workers are actively involved in the forming of the progressive standards and rates.

Personal responsibility of the leaders has been set for the prompt revising of standards.

The chief engineers (power engineers) of the enterprises and associations are responsible for the technical soundness of the standards and for their introduction.

In the area of saving material resources, particular importance is assumed by optimizing the amount of inventories at enterprises. Just how difficult this task is can be seen from the fact that a number of consumers require many thousands of product types.

At each enterprise there are major opportunities for reducing the consumption rates, for lowering surplus inventories and improving the indicators for the use of raw products, materials and energy.

The Volgograd Petroleum Machine Building Production Association each year has increased the metal use factor although here production is in individual units. The use factor, for example, for pipe has been brought up to 0.93-0.95.

The replacing of conventional pipe with brass and thin-walled pipe made from stainless steel has provided an opportunity to reduce the weight of articles by almost one-third in comparison with the standards. The annual savings has been 700,000 rubles. The brass pipe has been replaced with pipe having a tin content. This has provided another 100,000 rubles in savings.

The plant has increased the output of condenser coolers without increasing the consumption of scarce nonferrous metals and other materials. All the saving measures have been coordinated with the users of the petrochemical equipment and the metal suppliers.

The work of introducing and systematically improving progressive standards and norms is a vital matter in which the most important role is played by the enterprises and associations, by the production brigades and sections and by the related supplier enterprises.

The adopted decree provides for measures which increase the incentive of the collectives and enterprises to make effective use of the material resources. The formation of economic incentive funds has been made dependent upon the saving of resources. These funds will increase or decline also depending upon the level of material expenditures per ruble of product (work).

For this, the designated funds of the enterprises and associations will directly receive deductions from the total saving obtained due to reducing the material expenditures in comparison with the set limit. In instances of exceeding the limit by the enterprises the deductions into the funds will be reduced.

There is to be the broader paying of bonuses for savings to the workers, foremen, production engineers, designers and other engineers and technicians. A closer dependence has also been set for the bonuses upon the saving of specific types of material resources in comparison with the established technically sound (progressive-average) consumption rates. Up to 75 percent of the total obtained savings in material resources can be used to pay bonuses depending upon the type, cost and scarcity of these resources. The paying of bonuses to workers and specialists for savings must be introduced in all production areas where this is advisable and economically justified.

It is very important that the improvement in planning and the encouraging of savings in material expenditures be combined with greater economic sanctions for the overexpenditure of resources.

A nationwide socialist competition is to be evermore widely developed for savings and thriftiness.

Control must also be strengthened over the allocation and utilization of resources, the accounting system, reporting, and economic analysis of the correct and efficient expenditure of raw products, materials, fuel and energy.

Analysis of Resource Utilization

The analysis should be carried out in the sequence indicated in examining the basic areas for saving material resources. Initially data are studied on the material intensiveness of the products for the purpose of determining the fulfillment of state quotas for savings and the rational utilization of resources and to demonstrate the contribution of each production subdivision to this national undertaking. As a result of the analysis, opportunities are disclosed to further reduce material intensiveness and measures are worked out to put them into use.

The limit on material expenditures per ruble of product (work) for the enterprises and organizations will be established as of 1983, but the material intensiveness of products must be analyzed even now. Above all the analysis should be carried out for the shops producing the end product as well as for the enterprise as a whole.

The material intensiveness of individual product types is also determined according to the established procedure. The calculation should include the expenditures on raw products, materials, fuel, energy and other material resources per unit of product. The lower these expenditures the lower material intensiveness as well.

In the analysis a distinction is made between the planned and actual material intensiveness. The planned material intensiveness (as yet there is no limit for this) can be calculated from the data of the tekhpromfinplan [technical, production and financial plan] which gives the planned material expenditures and product costs. A comparison of the actual and planned material intensiveness provides an opportunity to see to what degree the quotas have been met for reducing material expenditures and by how much actual material intensiveness of the products is above or below the planned.

Let us assume that the material intensiveness of a product manufactured by a shop (with maintained external and internal plant cooperation) was (in rubles):

For 1980	0.65
Planned for 1981	0.63
Actual for 6 months	0.64

These data indicate that the expenditure of raw products and other material resources per article during the first half of 1981 was lower than in the previous year. However, actual material intensiveness is still higher than the planned. In the second 6 months the lag must be eliminated.

In the analysis it is essential to bring out how the resource-saving equipment is being developed and introduced as well as new economic and highly efficient materials.

Experience shows that at machine building plants it is particularly important to analyze the fulfillment of the designated measures to reduce the weight of the machines per unit of capacity or other indicator for the efficiency of the product.

The designers at the Moscow Electrical Machinery Plant imeni Vladimir Il'ich developed the design for the VASO-15 electric motor where the thickness of the housing (in maintaining the quality performance of the motor) was reduced from 45 to 36 mm. The metal consumption rate per motor was reduced from 1,285 to 1,053 kg. Some 230 kg are saved per machine and this is over 200 tons per year.

In analyzing the material intensiveness of the products, it is advisable to provide consumption rates for the material resources and the fulfilling of quotas to reduce them.

At the Rostsel'mash [Rostov Agricultural Machinery] Association, for example, in the Tenth Five-Year Plan the consumption of rolled ferrous metals per SK-5 Niva combine was (in kg):

	Standard for Year	Actual
1975	4,127	4,136
1976	3,967	3,978
1977	3,787	3,787
1978	3,660	3,681
1979	3,490	3,502
1980	3,375	3,371
1981	3,207	3,272

The data indicate that over the 5-year period, the consumption rate per combine was reduced from 4,127 to 3,375 kg. As a total over the 5 years, the collective saved 71,000 tons of rolled metal including around 15,000 tons due to designs to reduce the weight of a machine.

During the 11th Five-Year Plan, Rostsel'mash has also organized the work of saving metal well. The plan envisages that over the 5 years some 78,000 tons of rolled metal will be saved. Even in 1981, the consumption rate for rolled metal was reduced by 168 kg, and in 1982 the collective plans to bring the consumption of rolled metal per combine to 3,061 kg. This is 1,075 kg less than in 1975.

The brigade and personal plans for saving and the personal effectiveness scores are the basic sources of data to analyze materials utilization for the brigades and work areas. These ordinarily give indicators for the actual consumption of material resources in comparison with the current standards. It is very important that in the analysis the results be disclosed which depend upon the brigade itself or the worker. Without this it is impossible to assess the contribution of the individual participants in the production process to the overall "savings pot" as well as the course and results of the socialist competition for savings.

At the Sverdlovsk Pnevmostroymashina [Pneumatic Construction Machine] Plant, in 1981, 52 brigade and 134 personal savings scores were opened. The savings in materials and fuel for all these scores over the 10 months of 1981 reached 399,000 rubles (125,000 rubles in 1980). To the score of the foundry worker brigade of V. Chashchin, for example, there are savings of 10,175 kg of primary aluminum while the brigade of Ye. Usol'tsev has a savings of 1,504 kg of steel.

In the analysis it is not enough to study the overall data on savings for a brigade, section, shop or enterprise. It is also important to bring out which of the workers kept within the standards and obtained a savings and which permitted an overexpenditure. A simple calculation shows what opportunities a brigade, section, shop or enterprise possesses for additional savings if the workers (brigades) achieve a savings in material resources.

The personal creative plans of specialists should be analyzed in approximately the same procedure and these plans also contain indicators for the saving of material resources. The analysis should disclose the contribution of specialists to the overall results achieved by the collective.

In an analysis it is very important to study the possibilities for reducing the losses of material resources in the production process, primarily losses from rejected products. Certainly it is possible to save materials in producing parts or other products but to squander what has been achieved by permitting defective work in production. Thus, the Odessakabel [Odessa Cable] Plant, as a result of carrying out measures on a comprehensive system for quality control over the Tenth Five-Year Plan was able to reduce losses from defective products by 4-fold.

An important concern of the analysis is the use of wastes and secondary resources. It is advisable to make the analysis both as a whole for the section, shop or enterprise as for individual articles and product types. Here the amount of wastes is compared in two assessments: in terms of the price of the raw products and materials and in terms of the price of their possible use.

Let us assume that over the report year, for a shop the total material expenditures were 150,000 rubles, the amount of wastes in terms of the price of the materials was 55,000 rubles and in terms of the price of use, 5,000 rubles. In the previous year with material expenditures of 140,000 rubles, wastes respectively were 55,000 rubles in terms of the price of the materials and 4,000 rubles in terms of the use price.

In our example, the total expenditures of raw products and materials reached 150,000 rubles in the report year. But if one considers the wastes, the value of the actually used materials minus the value of the used wastes was only 95,000 rubles (150-55). The materials use factor equaled 0.63 (95:150) and for the previous year 0.61 (85:140).

Analysis indicates that in the report period the processing of waste products somewhat improved. The value of used wastes over this period reached 9.1 percent $\frac{5 \times 100}{55}$, while in the previous year it was 7.3 percent $\frac{4 \times 100}{55}$.

From this it can be seen that during the report year, although the shop increased the efficient use of the materials, only 67 percent of the value of the materials was actually used. As a result of this the losses from wastes were 50,000 rubles. The shop possesses enormous opportunities for saving materials by reducing wastes in production.

The analysis is completed by working out measures to strengthen the efficient use of materials.

In his speech at the November (1981) Plenum of the CPSU Central Committee, L. I. Brezhnev, in speaking about the conditions for fulfilling and overfulfilling the 1982 plan, put in first place the task of ensuring strictest economy in the use of all types of resources and efficiently and firmly eradicating mismanagement and wastefulness.

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RESOURCE UTILIZATION AND SUPPLY

ACADEMICIAN LASKORIN INTERVIEWED ON EFFICIENT RESOURCE USE

Moscow IZVESTIYA in Russian 12 Nov 81 p 2

[Interview with Academician B. Laskorin, chairman of the Committee of the All-Union Council of Scientific and Technical Societies on the Problems of Environmental Conservation, by IZVESTIYA correspondent K. Smirnov; date and place of interview not given]

> [Text] The introduction of waste-free and low-waste production processes is one of the important ways to the goal outlined by the 26th CPSU Congress, that is, the economy should be economic. Many readers have requested information about the problems related to the creation of waste-free production processes. An interview by the IZVESTIYA correspondent with Academician B. Laskorin, chairman of the Committee of the VSNTO [All-Union Council of Scientific and Technical Societies] on the Problems of Environmental Conservation, was devoted to these questions.

[Question] Boris Nikolayevich [Laskorin], the phrase "waste-free production processes" is constantly popping up on the pages of newspapers and is often repeated by radio and TV announcers. What is its sense and the secret of its popularity?

[Answer] The "Basic Directions in Soviet Economic and Social Development for 1981-1985 and for the Period Up to 1990" state that in the aim of increasing enterprise work efficiency as well as for fundamentally solving the questions of protecting the environment in all industrial sectors, particular attention must be paid to the development of low-waste and no-waste technology.

What is meant by this? The scientific councils of the USSR Academy of Sciences, the USSR GKNT [State Committee for Science and Technology] as well as the scientific and technical societies have analyzed the operation of enterprises in the various industrial sectors. This analysis has shown that wastes are not an inevitability. They merely reflect the development level of technology in one or another sector of industrial production. Wastes is the name usually given to semiproducts and products of incomplete production which at a given moment have not found rational application. For this reason often what yesterday was considered to be a waste today becomes a valuable raw material.

In ferrous metallurgy at present the slag continues to traditionally be termed a waste. But up to the present many combines utilize the blast furnace slag fully and contribute a major economic effect. The slag is used in road construction, for producing various building materials, for slag wool and as additives for cement. In the near future the question will be solved of fully utilizing the slags from steel casting production and thus this bulk waste from ferrous metallurgy will disappear.

An analysis of operations in various industrial sectors shows that the losses of many valuable products contained in the waste and effluent production waters are also not an inevitability. This also must be viewed as the result of the imperfection or primitiveness of the production systems.

[Question] But is this not a result of the fact that the equipment which protects nature costs a good deal?

[Answer] There is the opinion that the introduction of self-contained water circulating systems necessitates extensive capital investments and that this is economically ill-advised. But this is only the case when optimum solutions have not been found.

At present in virtually all the sectors of our national economy there are enterprises which operate with zero waste water, that is, the self-contained water circulating systems have been fully incorporated in the production systems. An example of this would be the Pervomaysk Chemical Plant in the Ukraine. The self-contained water circulating system planned for it and the recovery of solid and liquid wastes reduce capital and operating expenditures by 25 million rubles in comparison with a flow-through system. The plant's need for river water has been reduced by 30-fold. Moreover, several thousand hectares of fertile land have been preserved as with the flow-through system this would be occupied by reservoirs.

[Question] The self-contained water circulating systems are our tomorrow. But why do we continue to build treatment works?

[Answer] They still play a major role in protecting the environment against pollution and it is still too early to give them up. But the water circulating systems are also the today of many enterprises. Entire sectors, for example, the petrochemical industry have virtually converted to self-contained water systems.

The expenditures on creating the self-contained water circulating systems, as a rule, are less than building treatment works. The cost of even the most advanced treatment works is from 5 to 15 percent of the total capital investments, and in a number of instances approaches 30 percent. It is immeasurably easier and simpler to treat the effluents so that they meet the production requirements than it is to purify them to a degree that they meet the requirements of the entire ecological system.

[Question] Why then are the waste-free processes often worked out and introduced more slowly than the present level of science and technology requires?

[Answer] At present there is a large number of developments for new production processes the introduction of which would being us closer to low-waste and waste-free production. Take electric power and particularly thermal electric power. The

TES and TETs release sulfurous gas which pollutes the atmosphere but it could become a valuable raw material for obtaining sulfuric acid.

Our nation has developed methods to recover the sulfur dioxide from flue gases. However, the USSR Minenergo [Ministry of Power and Electrification] did not promptly put the experimental-industrial units into operation for this purpose. The question has long been on hand and has long required a resolution. In planning sulfuric acid production, it is essential to more widely consider the side production of it in burning the sulfur-containing solid and liquid fuels. The solution to this problem should be coordinated between the USSR Minenergo, the Minkhimprom [Ministry of Chemical Industry], the USSR Mintsvetmet [Ministry of Nonferrous Metallurgy] and a number of other ministries and departments.

In the same power industry, the most effective path to a lack of wastes involves a reorganization of the entire thermal power complex and a new, higher degree of cooperation and specialization. I am speaking, in particular, about the energy-production methods of utilizing solid and liquid fuels and making it possible to obtain valuable chemical products and high quality gaseous fuel. This is particularly important as regards the Ekibastuz and Kansk-Achinsk coals. Here there are great possibilities. Merely departmental barriers stand in the way.

The task of the integrated use of raw materials is in essence the task of surmounting the interdepartmental barriers.

[Question] You and I have been speaking basically about production problems. But does not a great deal depend also on other factors such as organization and planning? Perhaps the degree of waste-free production which could not be achieved at a specific plant could be realized on the scale of a territorial-production complex....

[Answer] Of course, it does depend on other things. I have already mentioned the Pervomaysk Chemical Plant. It is interesting, among other things, in the fact that its plans included the industrial production processes as well as the technological processes of the urban economy. Integrated solutions are simpler to find on a city-wide scale. And it is even easier on the scale of a territorial-production complex. But naturally it is essential to also seek out such solutions within the individual sectors. It is essential that the sectors start building bridges toward one another in this area. Forms and methods must be sought out for encouraging (including material incentives) the ability to operate without wastes.

Incidentally under the USSR Gosplan an interdepartmental commission has been set up for the integrated use of mineral deposits. A specific integrated program is being worked out and will be implemented for "Ensuring the Integrated Use of the Basic Types of Mineral Resources." Recently the USSR Council of Ministers established an interdepartmental commission on the saving and rational use of material resources.

[Question] Hasn't the time now arrived to recognize the mining dumps of previous decades as new mineral deposits?

[Answer] Very likely such a time has come. A detailed investigation must be made of all the wastes and "tails" in the nation and an assessment made of what they contain. The extraction of minerals from these "tails" can be significantly cheaper

than the exploration and exploitation of new deposits. But specific production schemes must be organized and a technical and economic evaluation given for the working of these "deposits."

[Question] There is one other type of undiscovered "deposits" namely secondary raw materials....

[Answer] These are the richest "deposits" and reserves for increasing economic efficiency and we must not merely talk about them but literally sound the alarm. A ton of aluminum from bauxites costs 6-8-fold more than a ton from secondary raw materials. The ratios are even more striking for other materials. Unfortunately, our country still has a low level of secondary utilization of metals, wood, paper, plastics and textiles. No matter how strange it might seem, the reason is often here in the absence of elementary organizational and technical measures.

Take paper. Mountains of used and unused paper pile up in offices and homes. But the scrap paper collection points either operate poorly or not at all. The very system of these points is not very convenient for organizations and individual citizens. For example, a vehicle collecting from houses and offices could bring in more raw materials than 5 or 6 stationary points. I don't understand why this cannot be done now.

We should have an effective, mobile and flexible system for the collection of secondary raw materials. Let us imagine that an organization orders 100 tons of paper a year. Demand paper back from it. Or let us satisfy its orders only if a certain percentage of the paper is returned after use. This applies not only for paper but also for ferrous and nonferrous metals, plastics, films and textile. For example, I would not sell lubricating oil to car owners if they did not return an equivalent amount of used oil. This is a fine raw material. But we pour it out polluting the environment. We also utilize our wood very poorly. We burn wooden boxes in bonfires or dump them on the rubbish heaps. We should use them properly.

In the simple rubbish of a city there is almost the entire Mendeleyev table and a large amount of valuable materials....

[Question] But, as is apparent, it is technically difficult to separate all the valuable components.

[Answer] Why? There are factories for the processing of trash. There is positive experience in both the USSR and abroad. It would be advisable to set up an all-Union production association for such work. It would produce many millions of rubles in profits. At present the public discards approximately the same amount of consumer goods as industry produces.

[Question] It turns out that the opportunities for economic, waste-free or low-waste utilization of natural resources exist literally in any national economic sector. But what are the particularly important, key problems here? What can science offer us in this regard?

[Answer] I have already mentioned several specific problems. At present, I feel, the question is not in what science can offer but rather what it owes society in

this regard. In many instances when we encounter the inefficient use of raw materials, we are involved precisely with an unpaid debt of science. There is no lack of proposals of a general sort. But very often here there are no specific systems and methods which could be employed as initial data for one or another plan or for which capital investments could be legitimately requested.

If, in summing up, we move on from the specific tasks which you and I have been talking about to the, so to speak, strategic task, then it turns out that the integrated use of raw materials and the creation of low-waste and waste-free production are not just a new scientific area. This is the "bud" from which a mighty tree will grow. Its roots penetrate the most diverse areas of modern knowledge and its fruits will be used by the most different sectors of the economy. Frankly speaking, it seems strange to me that within the structure of the USSR Academy of Sciences up to now there has not been any subdivision which would focus the efforts precisely in this area, on the problems of the integrated use of natural resources. Science should literally plague the production workers about this and not give them a single minute of quiet. Certainly each lost minute on a nationwide scale involves great losses of raw materials and energy. In this regard it is wise to recall the words of L. I. Brezhnev voiced by him at the 26th Party Congress: "...Science should be a constant 'disturber of the peace' in indicating in what areas there has been stagnation and lagging and where the present level of knowledge provides an opportunity to move forward more quickly and more successfully."

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RESOURCE UTILIZATION AND SUPPLY

VIEWS ON ECONOMIC EVALUATION OF NATURAL RESOURCES CONTRASTED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 9, 1981 pp 114-116

[Article by T. Kislova, docent at the L'vov Forestry Engineering Institute: "On the Question of an Economic Evaluation of Natural Resources"; the article was written as a point of departure for further discussion]

[Text] The increased scale of exploiting natural resources requires an evermore active concern for their replenishment and economic evaluation.

There are various viewpoints on the question concerning the bases for an economic evaluation of natural resources. These viewpoints can be represented in the form of two basic and, I would feel, opposing concepts. One of them, the expenditure viewpoint, consists in the fact that the evaluation of natural resources should be made according to the expenditures for their reproduction.[1] According to the second view, the rent one, natural resources should be assessed in accord with the role which they play in general national economic production, that is, from the amount of the economic effect contributed by them.[2]

Both concepts merit attention since each of them, in our view, is valid. In actuality, one must not ignore the colossal expenditures on the tapping of irreplenishable natural resources or even on the reproduction of replenishable ones. Consequently, in evaluating natural resources it is essential to consider the expenditures on their development and reproduction. At the same time, in evaluating natural resources, we should bear in mind that effect which the national economy obtains in using them, that is, the portion of social labor which is saved in this.

Thus, the given evaluation concepts are completely sound, however the evaluations themselves, in our opinion, relate to different objects and this must be considered in evaluating natural resources. These objects are, on the one hand, the product

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[1] S. Strumilin, "On the Price of the 'Free Gifts' of Nature," VOPROSY EKONOMIKI, No 8, 1967, pp 60-62.

[2] See the collection "Ekonomicheskiye problemy optimizatsii prirodopol'zovaniya" [Economic Problems in Optimizing the Utilization of Nature], Moscow, Nauka, 1973, pp 35-53.

obtained in exploiting the natural resources and, on the other, the used natural objects themselves, that is, the sources of this product. Obviously an economic evaluation of the designated objects should be constructed differently. The product obtained in exploiting natural resources, like any other product, is assessed on the basis of its costs which, along with current expenditures, also include capital investments in the form of amortization. Expenditures on the tapping of natural resources in a number of instances are precisely such one-shot capital investments which are reflected in product costs in the form of amortization (for example, in mineral mining the expenditures on the construction of the mine, the removing of overburden, the carrying out of permanent working needed in preparing the deposit for operation are reflected in this manner). In the development of the virgin lands, capital investments for the building of roads and the construction of buildings and installations for production and other purposes are also considered through the amortization of the fixed capital created as a result of this in the costs and the price of the produced agricultural products.

Consequently, the expenditures for the development and reproduction of natural resources should be taken into account and, as price formation practices indicate, be accounted for in evaluating the product obtained as a result of exploiting the natural resources. This conforms fully with the expenditure concept. But the sources of this product, that is, the objects from the use of nature, must be assessed, as the offers of the rent concept propose, from the effect contributed by them.

Thus, in being related to different objects of evaluation, these concepts, in our view, do not contradict one another and are not mutually exclusive as one has come to consider.

For the objects from the use of nature, two evaluations can be employed: a current or rental one which is the average annual estimate of a unit of natural resources (a hectare of agricultural land, a unit of mineral reserves and so forth) and designed for collecting the payment for the use of natural resources; a capital evaluation for the nature-use object and designed to consider the wealth of the nation as well as for determining the loss in withdrawing the given object from economic circulation (for example in using agriculture or forested land for construction).

According to this concept, the rental evaluation of natural resources should be construed as the difference between the marginal expenditures for obtaining the product and the expenditures for obtaining it from the natural resources being assessed, that is, from the amount of differential rent arising as a consequence of differences in the quality and location of the nature-use objects.

The introduction of a payment for the use of all types of exploited natural resources is a pertinent question. In terms of its significance it is one of the elements in the system of measures aimed at rationalizing the use of the means of production.

The criterion of the capital evaluation of a nature-use object, according to the rent concept, is the aggregate national economic effect contributed by the given resource while the capital evaluation itself is the total of the discounted rental estimates, that is, calculated considering the time factor over the entire period

of operating the given nature-use object. The capital evaluation of replenishable natural resources for which this period is infinite, with a change in the amount of their annual rental estimates, is expressed as the capitalized differential rent.

In sharing the stated basic provisions of the rent concept in an economic evaluation of nature-use objects, in our view, it is essential to point out the following.

With the existing practices of setting prices for the products of a number of the extracting sectors using the average sectorial expenditures, the rental evaluation calculated from the amount of differential rent will be obtained only by the relatively better natural resources. This means the gratis use of not only the poorer natural resources in terms of quality and location but also the average ones. Such a procedure naturally does not conform to the urgent tasks of rationalizing the use of nature. Certainly, in exploiting average-quality resources, differential rent also occurs. It is formed as a consequence of differences in the productivity of the labor spent in exploiting the different quality natural resources and as long as such differences exist, rent occurs regardless of the method of its distribution. However, in this instance it is manifested not in the form of additional income but rather an avoidable loss which occurs in exploiting relatively poorer resources and is absent in exploiting medium-quality resources. Its amount corresponds to the difference between the marginal and average sectorial expenditures. For this reason, for medium-quality natural resources a rental evaluation which determines the amount of the payment for their use should be constructed on a somewhat different basis which requires detailed study.

In recognizing the validity of using the indicator of marginal expenditures in calculating the capital estimate for average and better natural resources, it must be pointed out that the establishing of the designated evaluation solely from the amount of annual rent, as the authors of the rent concept propose, understates its level. The capital evaluation calculated in a similar manner reflects only the comparative and not the absolute value of the resources, as does the rental evaluation. In this instance the relatively poorer natural resources should receive a zero capital evaluation as if their exploitation did not bring society any income. However this is valid only in the instance when the resources are not used as such an evaluation shows precisely the advisability of their use. Expenditures on the development and reproduction of such resources would also be ill-advised. At the same time, the abandoning of their development would lead to a situation where the expenditures on exploiting the relatively better resources would be marginal ones and these resources, in turn, would receive a zero evaluation. A zero evaluation under the conditions of a socialist economy can occur only in those instances when the irrecoverable loss of a given resource is not accompanied by losses for society either at the given moment or in the foreseeable future.

But if such resources are consumed then, consequently, their development and exploitation are economically advisable, that is, they bring an effect. The loss of these resources is a loss for society. In our opinion, only the rental evaluation can be a zero one as this indicates that the use of the given resources should not be paid for. But the capital evaluation for resources which are exploitable or economically suited for exploitation should always be higher than zero. In our view, it would be better to set the designated evaluation for natural resources using the capitalized income which includes, in addition to rent, a certain amount of accumulation.

Here we proceed from the following considerations. Natural resources, in being involved in the sphere of production activity, are turned into the means of production in operating in the form of working capital. Usually the resources assume the form of incomplete production and finished products and in the lumbering industry, the form of production stocks (the paid-for standing wood reserves). As working capital, the natural resources which become exposed to labor are accounted for in the established procedure in figuring the payment deducted from profit for production capital. That portion of these deductions which corresponds to the share of the labor-transformed natural resource in the working assets must be viewed as the effect brought to the national economy by the exploitation of the given natural resource. In this instance the capital evaluation of the relatively poorer natural resources when differential rent does not arise in their exploitation is not zero, as it will contain the capitalized profit.

The investing of funds into improving natural resources (for example, land reclamation) ends up with an increase in the volume of product obtained in the exploitation of these resources or by a higher quality of the product. Thus, the income is increased for the given object of natural resources and, consequently, its rental and capital evaluations increase and the payment for the right to use it rises. Thus, expenditures on improving the natural resources will be reflected in their economic evaluation and this conforms fully both to the expenditure and the rental concepts.

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